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SHOES: A SOURCE OF REINFECTION IN RINGWORM OF THE FEET

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DETROIT

After attempts made by us [1] several years ago to determine the source of recurrences of ringworm, it was decided to investigate the possibility of shoes acting as a residual source of infection. It is unfortunate that at this time only a preliminary report can be given, but we hope to increase the series to at least one hundred cases in the near future and to publish a complete report at that time.

Although fungous infections of the feet are common at present and widely disseminated, in the past most of our efforts toward eradication of the disease have dealt with the individual patient. A number of articles, however, have been written on sterilization of shoes and clothing and prevention of spread in such places as showers and locker rooms, among which may be listed the papers of Ayres, Anderson and Youngblood,[2] Williams,[3] Henderson,[4] Osborne and Hitchcock [5] and Shaffer.[6] Cornbleet [7] has advanced the theory that disorders of the

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1. Jamieson, R. C., and McCrea, A.: Recurrence or Reinfection in Ringworm of the Hands and Feet, Arch. Dermat. & Syph. **25**:321 (Feb.) 1932.

2. Ayres, S., Jr.; Anderson, N. P., and Youngblood, E. M.: Fumigation as an Aid in the Control of Superficial Fungus Infection, Arch. Dermat. & Syph. **24**:283 (Aug.) 1931.

3. Williams, C. M.: Tinea of the Nails as a Source of Reinfection of Tinea of the Feet, Arch. Dermat. & Syph. **18**:730 (Nov.) 1928.

4. Henderson, Y.: Fungus Infection of the Feet: Fumigation of Shoes with Formaldehyde as a Means of Treatment, Arch. Dermat. & Syph. **26**:710 (Oct.) 1932.

5. Osborne, E. D., and Hitchcock, B. S.: The Prophylaxis of Ringworm of the Feet, J. A. M. A. **97**:453 (Aug. 15) 1931.

6. Shaffer, L. W.: Incidence and Prophylaxis of Epidermophytosis in School Children, J. Michigan M. Soc. **32**:648, 1933; Factors Affecting the Immunity Balance in Dermatophytosis, ibid. **34**:601, 1935.

7. Cornbleet, T.: Disorders of the Feet as a Cause of Resistant Eczematoid Ringworm: Their Influence on the Amount of Sweating of the Feet, Arch. Dermat. & Syph. **29**:887 (June) 1934.

feet influence the amount of sweating, which in turn acts as a factor in the production of resistant eczematoid eruptions.

The method of procedure adopted was to obtain scrapings from the inner soles of shoes of patients who had a definite fungous infection of the feet, proved clinically and in most instances microscopically. The object of the study was to determine by cultural differentiation how many patients with ringworm harbored parasitic fungi in their shoes.

No attempt was made to show that the fungus causing the cutaneous infection was necessarily the same as that found in the shoes. Material for culture was obtained by scraping with a sterile curet the inner surface of the inner sole of the shoe in active use by the patient; the material thus obtained was deposited in a sterile container until it was sent to the laboratory for culture.

Results of Examination for Parasitic Fungi of the Skin

Results of culture	No. of Samples
Definitely positive	16
Definitely negative	13
Doubtful	23
Negative (shoes of noninfected person, control)	1
Total	53
Organisms isolated	
Known pathogens:	
Trichophyton	14
Epidermophyton	2
Suspected pathogens:	
Monilia	11
Cryptococcus and torula	4
Yeast	8
Penicillium brevicaule	5
Fungi believed nonpathogenic:	
Aspergillus	43
Penicillium (other than brevicaule)	27
Alternaria	7
Macrosporum	4
Mucor	3
Fusarium	2
Briarea	1
Hyalopus	1
Hormodendrum	1

The idea prevails among the laity that shoes are a potent source of infection, but utter disregard is shown of careless habits of walking about barefoot at bathing beaches, on floors of locker rooms or in homes, and it is more than probable that from any one of these practices a number of parasitic fungi can be acquired.

It seems to us that a new shoe would not become a likely source of infection as a result of having been tried on by persons with ringworm of the feet. Those who have an active infection of the feet would be unlikely to attempt trying on new shoes, and those with a latent infection would have such a brief contact that deposition of fungi would be improbable.

In all fifty-three specimens have been studied, scrapings being obtained from the inner soles of shoes worn by patients with ringworm of the feet. Some infections were severe and widespread; others were

mild or even of interdigital type only; some constituted a first attack; others had been characterized by several exacerbations. The patients were of both sexes; their ages varied from 4 years to 66, and the series comprised teachers, clerks, housewives, grocers, laborers, dentists, tailors and members of other professions.

In the laboratory the work carried on by one of us (A. McC.) gave some interesting results regarding the number and variety of fungi found—known pathogens, suspected pathogens and fungi believed to be nonpathogenic.

The table gives briefly the types of organisms found and the frequency of their occurrence.

Analysis of the organisms observed in the fifty-three samples gave results as follows:

Positive clinically	52
Positive clinically and culturally (pathogenic fungi)	16[8]
Positive clinically; suspected pathogenic fungi in culture (Monilia, Cryptococcus, yeast and Penicillium brevicaule)	19
Positive clinically but negative culturally (no pathogenic fungi)	16
Negative culturally (no pathogenic fungi, control)	1
Nonpathogenic fungi with and without the pathogenic varieties	43
Completely negative for all organisms, bacterial and fungous	3[9]
Trichophyton only in culture	1
Nonpathogenic fungi only	15
Multiple organisms of both pathogenic and nonpathogenic types	37

In comparing the number of cases in which fungi known to be pathogenic were found (sixteen) to the total number of cases (fifty-two), one is impressed by the small percentage of positive results. It should be remembered, however, that the shoes examined had been worn for varying periods, some having been worn a long time, others being almost new. The time element was exemplified in one case in which a new shoe and an old one were examined. Scrapings from the new shoe gave negative results; those from the old shoe gave positive results, thus raising the question of whether or not a shoe becomes a more potent source of reinfection proportionately to the length of time it is worn. There may be a certain amount of foundation for the common belief that shoes can reinfect.

Of the thirty-five cases in which pathogenic and suspected pathogenic fungi were found the latter kind was found more frequently. Many fungi of this group are often found to be the sole organism in cases of clinical ringworm, and support is thereby given to the theory that nonpathogenic fungi may become pathogenic for certain persons under certain conditions.

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8. In one of these cases scrapings were obtained from one old shoe and from one new one. The scrapings from the old shoe revealed Trichophyton in culture. Those from the new shoe remained sterile throughout.

9. Two of the shoes from which scrapings were obtained had been sterilized by formaldehyde fumigation.

COMMENT

When one considers the careless habits of the vast majority of persons one would expect to find a higher percentage of potential pathogens, as the laity apparently believe that their own floors are free from bacteria and fungi, forgetting that all varieties of organisms may be carried into homes on shoes. Persons walk freely on floors of bedrooms or bathrooms with or without shoes or stockings. Bedroom slippers worn on unprotected infected feet may be a prolific source of reinfection, which, however, we have not yet investigated.

In view of the cultural results with scrapings from new shoes, it is difficult to believe that they are a source of reinfection. It seems that inner soles would be thoroughly sterilized in the process of manufacture. Nor does it seem probable that infected feet would deposit pathogenic fungi in the process of trying on new shoes, as the feet of persons with active lesions are too sensitive to allow such trial.

Sterilization of infected shoes by fumigation with formaldehyde as recommended by Henderson [4] appears to be an effective method of destroying fungi, as the scrapings from all shoes sterilized by this method failed to reveal evidence of fungi. This method of sterilization is not at all difficult to carry out, and its use would remove a possible source of contamination if the shoes are to be worn again by the patient or by any one else. Henderson's view is that not only are the shoes sterilized by the formaldehyde but there is also a beneficial effect on the skin by the gas retained in the leather, which is gradually released when the shoe is worn. A still greater degree of safety would result if the shoes were sterilized at frequent intervals.

If we may draw any conclusions from a comparison of the present study with our work in 1931 on the persistence of the organism in the tissues, it appears that shoes are not a probable source of infection or reinfection but should be definitely considered as a potential source of infection, especially if they are worn by noninfected persons. Patients with ringworm of the feet, therefore, should be warned against giving away infected shoes without first submitting them to thorough sterilization.

SUMMARY

In this study fifty-three samples of scrapings from shoes were examined by cultural methods. Sixteen samples showed pathogenic fungi in culture, thirteen samples showed no such fungi; culture of twenty-three samples gave doubtful results, and culture of one control sample gave negative results. Known pathogens were isolated in sixteen instances; twenty-eight specimens showed suspected pathogens, and various fungi believed to be nonpathogenic were found in large numbers (eighty-nine times), many specimens revealing a number of varieties.

Although definite pathogens were found in sixteen specimens and suspected pathogens in twenty-eight, it is believed that infected shoes can be considered only as potential sources of infection or reinfection in ringworm of the feet.

Recent reports from many of the patients constituting this study group revealed that irregular recurrences of moderate severity had been the rule, regardless of whether new or old shoes had been worn.

Although a number of pathogenic fungi have been found in scrapings from the inner soles of shoes worn by patients with ringworm of the feet, it is impossible to state definitely whether such fungi had been deposited there from the infected skin or had been carried there from stockings.

This report is only preliminary. A full report will be made on completion of the study.

ABSTRACT OF DISCUSSION

DR. MARION B. SULZBERGER, New York: I was much interested in Dr. Jamieson's paper and was somewhat astonished at the high percentage of positive results obtained from culture of material from the shoes. I was astonished because I knew the unpublished results of a study by Maurice Husick, of Dr. Hopkins' staff. Husick was unable to obtain pathogenic fungi from culture of material from over one hundred pairs of shoes and slippers of patients with ringworm. This may have been due to the fact that the rapid growth of the numerous saprophytes made it impossible to observe the pathogenic fungi.

The importance of this study from the point of view of infection and reinfection has been treated conservatively by Dr. Jamieson, and I am inclined to agree with him. Probably the external and exogenous infections are of little or no importance in the production of exacerbations of athlete's foot. I say this because it has been conclusively shown that most normal persons once they have been infected carry the fungi on their feet forever, as demonstrated by careful examination and culture of material from the interdigital and macerated areas or from the dry and crumbly patches of toe-nails. It is possible, therefore, for infection and reinfection to occur without any exogenous source, and such sources, including floors, pools, shoes, etc., are in my opinion negligible factors in the recurrent attacks of dermatophytosis in adults.

The question arises: Why does this disease manifest itself in long periods of almost absolute quiescence alternating with sudden explosive exacerbations and periods of activity? I think that this is due to local cutaneous conditions which favor the flare-up of the disease and to general conditions which interfere with the existing immunity. I believe that the local factor is often due to the maceration. Jadassohn and I have shown that, as a rule, these fungi cannot propagate except in dead tissue and that it is impossible for them to multiply within living cells (*Arch. f. Dermat. u. Syph.* **157**:345, 1929). Thus, their numbers can increase only if there is available an adequate amount of dead tissue in the form of macerated, horny cells, detritus, etc. When such soil is made available the fungi multiply with extreme rapidity, and there is a sudden tremendous increase in the amount of allergens produced. I think that exacerbations of this form of ringworm are often traceable to an increase of available soil suitable for fungous growth and that any production of areas of macerated skin furnishes this suitable nonliving substratum. This explains why these exacerbations occur so often after

excitement, after playing golf and after swimming. I have observed that exacerbations of dermatophytosis of the feet occur more often after bathing in pools than after bathing at beaches. In the latter type of bathing the feet are as a rule unconsciously dried in the hot sands, while, on the other hand, the moist floors of the pool, the showers and the locker rooms produce and maintain the intertriginous macerations.

If exogenous infection were important in the production of the individual attacks of athlete's foot there would surely be more instances of husband and wife being simultaneously affected or of grouped simultaneous occurrences of the disorder in families. In view of the extremely high incidence of the disease itself, the rarity of simultaneous exacerbations in marital and familial groups is astonishing, and this epidemiologic evidence is in itself sufficient to prove the unimportance of exogenous infection as productive of the individual attacks.

There is one important factor concerning shoes and ringworm infection which, I believe, merits greater attention. In the last three years I have seen many disorders which have been diagnosed as dermatophytosis of the feet and have been treated as such for periods as long as nine years. These were all vesicular eruptions of the feet showing exacerbations and recurrences. But I have been able to prove that at the time of my observation these particular attacks were due not to ringworm but to the dye or finish of the socks or to leather-tanning agents or leather dyes used in the manufacture of the shoes. And the eczematous dermatosis of the feet has been eliminated in a whole series of cases merely by use of the proper shoes or the proper socks. In two of my cases the eruption was due not to shoes or to socks but to shoe-polish.

Dr. James H. Mitchell, Chicago: At one time I had the same idea as Dr. Jamieson about transference of ringworm, and I examined a number of inner soles, but my experience coincided with that of Dr. Sulzberger. The overgrowth of the "tramps" was so great that I gave up the attempt to recover the pathogenic organism.

A few years ago in answering queries in *The Journal of the American Medical Association* I suggested for the first time, so far as I am aware, the sterilization of the shoes with formaldehyde. I use this method constantly because it is simple. I tell the patient to get some caster cups, which can be obtained in any 10 cent store, fill them with formaldehyde, place one in each shoe and put the shoe in a covered shoe box. The patient is cautioned to air the shoe thoroughly every day to prevent formaldehyde dermatitis.

Regarding contamination, I agree with Dr. Sulzberger, but I do not agree with his opinion regarding the familial infection. In a paper I read some years ago an instance of familial infection was reported. A young man who had been married a few months brought his wife to me with acute vesicular ringworm of the soles. When I had examined her he took me aside and told me that he wished to use precautions so as not to acquire the infection. When after considerable difficulty he consented to be examined I found that he had the typical macerated condition in the interspaces; he had acquired it in college. Obviously there must have been some kind of foot to foot contact resulting in infection of the wife's feet.

Dr. Charles M. Williams, Stonington, Conn.: I think that Dr. Jamieson is conservative, perhaps ultraconservative, for it seems to me that any source of infection will produce the disease at some time, and if shoes are contaminated they are a source of infection for the person who wears them. I doubt that they are a common cause of infection. I think that reinfection from the toe-

nails or exacerbation of an old infection is more common. In a xerodermatous skin the organisms are often hard to find, as vesicles are often small, the reaction of the tissue to the infection expressing itself by an increase in thickness of the horny layer, as described by Moukhtar over thiry years ago.

I have seen familial infection in the case of a man and his wife.

I do not quite understand how the shoe becomes contaminated. The organisms have to go through the sock, and unless it is worn for a fairly long time it would be difficult for them to go through, but they might go through a hole in the sock. I think that a more likely source of infection would be house slippers, and I hope that Dr. Jamieson will carry out his study on slippers.

Dr. Jacob H. Swartz, Boston: I carried out the same type of study on house slippers, but my series was not as large as Dr. Jamieson's. The percentage of positive results I obtained was not as high, but I was looking for the same pathogenic organism.

Dr. Fred D. Weidman, Philadelphia: I also made such studies many years ago, and I am curious to find out what the technic was, i. e., whether Dr. Jamieson selected any particular part of the leather, such as one that had not been in contact with much sweat, what kind of culture mediums he used and so forth. My cultures were overgrown by so many "tramps," such as mucors, that dermatophytes could not have been recognized even if they had been present.

Dr. J. Gardner Hopkins, New York: I was astonished at the statement of Dr. Sulzberger that the majority of normal persons could be shown to be carriers of ringworm. My own impression is that it is extremely difficult to find fungi even in the majority of cases in which there is clinical indication of dermatophytosis.

Dr. Harold N. Cole, Cleveland: I agree with Dr. Williams that Dr. Jamieson's opinion on this subject is too conservative. I think that a percentage of positive results as high as that which he obtained has some significance and that the work should be followed up further. I think it would be interesting to examine old shoes and find out how long organisms continue to be present in unused shoes. This may be important and may help in eradicating general epidemics of dermatophytosis.

Dr. Frank W. Cregor, Indianapolis: The science does not seem to serve as well as the art in treating mycotic infections. The organisms seem omnipresent. I believe that there are enough pathogens in the rug on which I now stand to infect all who are present here.

Care of the feet to prevent abrasions and protection of abraded areas if present in order that a portal may not be afforded for the entry of the organisms seem important.

Darier has called attention to the depth of the infection into the coil and sebaceous glands in cases of long standing infection. The type of hose worn at present does not lend itself to sterilization, and since hose can be worn on either foot the infection when present is soon carried to the other foot. Full cooperation of the patient is absolutely necessary; if necessary hose that may be sterilized should be worn under the silk or rayon, and if that is done it will be immaterial whether the shoes are contaminated or not.

This procedure with the proper application of compound ointment of benzoic acid will bring about a cure, whereas the requirements of fumigation or the many other measures that have been suggested will not meet with cooperation because of the burden entailed. Patients who are ambulatory will not follow instructions as those confined to bed may be expected to.

DR. ROBERT C. JAMIESON: I am much gratified to have raised so much discussion on this subject, although it is of almost universal interest.

Regarding Dr. Sulzberger's remarks, I was under a similar impression until I began this work, believing that in almost every case of ringworm of the feet pathogenic fungi could be found in the shoes, and I was surprised to find that such fungi could be demonstrated in only about 30 per cent of the cases. I agree that most of the recurrences on the feet are due to endogenous sources and not to exogenous material, such as shoes or socks. I think that this accounts for the fact that relapses occur at definite times, depending on local conditions and on the local resistance of the patient. It seems to me, however, that the organisms should be found deep in the tissues rather than on the surface.

I agree with Dr. Williams' remarks concerning slippers, and I think that perhaps they are a great source of infection if one considers that the recurrences are produced by outside sources and not by material from the nails or by macerated material between the toes.

The remarks of Dr. Swartz also bear this out, for many persons wear house slippers without any regard for the fact that they may have ringworm. The lesions may heal, and the patients may think they have recovered, but they forget that they can be reinfected by means of the slippers.

Regarding Dr. Weidman's questions, I think I have no suggestions to make about technic. I tried to obtain scrapings from the part of the shoe nearest the involved area. The ordinary Sabouraud medium and the usual cultural methods were used.

Dr. Cole's remarks about old shoes as a source of infection may be extremely applicable to persons who after discarding their shoes give them to some one else. Such shoes may prove to be a source of infection if they are not sterilized before being given away.

I am in Dr. Cregor's class. I do not have ringworm and have never had it so far as I know, although I ran around barefoot in childhood as much as any one else. I agree regarding the sterilization of hose, and one thing I insist on is that patients with ringworm shall not wear wool hose. I think that wool hose, especially in summer, are provocative of ringworm. I do not go so far as to say that patients must wear cotton hose inside the silk hose, for I think that pressing with a hot iron is as effective as any means of sterilization, and it does not matter whether the hose worn are silk or cotton provided they are sterilized.

FAILURE OF THERAPY WITH GLANDULAR PREPARATIONS IN ACNE VULGARIS

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The belief that there exists a relationship between acne vulgaris and an altered function of the endocrine glands has been expressed so often and for so long that it hardly seems necessary to repeat details here. However, a few salient factors in this regard should be mentioned. Although the relationship is not definitely proved, most modern writers do not hesitate to state without reservations that acne vulgaris is due to a dysfunction of the endocrine glands.

Bloch [1] recently examined 2,136 girls between the ages of 6 and 18 years and 2,055 boys between the ages of 6 and 19 years. He found comedones and seborrhea (the early stage of acne) in 71 per cent of all the patients examined. The height of the development of this stage of the disease coincided with the height of the development of puberty in 80 per cent of the patients in whom it occurred. The appearance and development of the lesions of acne paralleled the development of the signs of puberty, i. e., the growth of axillary and pubic hair, the appearance of the secondary sexual characteristics and the beginning of the menses in girls. All these factors depend on the glands of internal secretion for their proper existence; hence acne is considered as nothing more than a pathologic variation of a normal reaction of the follicle and its accompanying sebaceous glands due to irritation caused by the secretion of the endocrine glands.

Stein [2] agreed with Bloch that the early stages of acne are due to modifications of the function and correlation of the endocrine glands. However, he presented a more rational view; he expressed the opinion that in an anatomically altered skin (follicles and sebaceous glands) toxic substances are accumulated which are produced partly by the abnormal endocrine metabolism and partly by the gastro-intestinal tract.

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1. Bloch, Bruno: Metabolism, Endocrine Glands and Skin-Diseases, with Special Reference to Acne Vulgaris and Xanthoma, Brit. J. Dermat. **43**:61 (Feb.) 1931.

2. Stein, R. O.: Poisoning of the Skin as a Cause of Dermatosis in Puberty, Internat. Cong. Dermat., 1935, p. 38.

These toxic substances are able to cause by themselves an inflammatory process, represented in acne by infiltration and suppuration.

As early as in 1921 Hollander [3] expressed the belief that acne is due to an endocrine imbalance caused by the needs of the general organism at the time of puberty. He expressed the belief that the thyroid gland primarily, and the gonadal apparatus secondarily, were at fault.

In the early part of this year Lawrence [4] stated:

> Abundant evidence exists in the literature indicating that an endocrine imbalance incident to adolescence is the major, if not the sole, etiologic factor in acne vulgaris.
>
> From studies made in our clinic, it seems highly probable that this imbalance involves the anterior pituitary gonadal mechanism.

Lawrence based his opinion on the favorable results obtained in a series of 15 cases, the report of which was published in 1935,[5] and in a series of 30 cases reported on in 1936. In the latter series, 10 patients were considered cured; 11 were much improved, and 9 showed only moderate improvement. No difference was apparent between the two sexes as regards response to treatment with the gonadotropic substance from the urine of pregnant women over a period of from three to four months. In the series of 15 cases the results were good in 8 and fair in 4; no improvement resulted in 3. The period during which patients were under observation was not stated.

Recently, Van Studdiford [6] reported less successful results in a clinical investigation of the effects of administration of ovarian or orchic extracts by mouth. Two hundred and eighty-four female patients were given 10 grains (0.65 Gm.) of desiccated extract of whole ovary daily. In eight weeks 134 showed no improvement; 76 began to improve somewhat in six weeks, and in 35 improvement appeared as early as the fifth week. Because of the curative effect marriage is supposed to have on acne, 27 women were given 15 grains (0.975 Gm.) of orchic extract daily for a long time. Eighteen of the 27 women had received ovarian extract over a long period; 10 failed to improve after this combined treatment, while 8 were somewhat improved. Of the 9 patients receiving orchic extract alone, 7 showed improvement and 2 did not. Nine males were given 15 grains of orchic extract daily, but no improvement in their acne resulted. Sixteen women with acne and amenorrhea were

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3. Hollander, Lester: The Rôle of the Endocrine Glands in the Etiology and Treatment of Acne, Arch. Dermat. & Syph. **3**:593 (May) 1921.

4. Lawrence, Charles H.: The Anterior Pituitary-Like Hormone: A Clinical Study of Its Effects in Acne Vulgaris, J. A. M. A. **106**:983 (March 21) 1936.

5. Lawrence, C. H., and Feigenbaum, Jacob: The Treatment of Acne Vulgaris with Pregnancy Urine Extract, New England J. Med. **212**:1213 (June 27) 1935.

6. Van Studdiford, M. T.: Effect of the Hormones of the Sex Glands on Acne, Arch. Dermat. & Syph. **31**:333 (March) 1935.

given combined treatment with estrogenic substance and the gonadotropic substance from the urine of pregnant women. Eight showed improvement and menstruated regularly, while the remaining 8 showed no improvement. Thyroid extract was of no value in the treatment of acne, according to Van Studdiford.

The opinions of the authors mentioned previously seems to leave little doubt that acne is due more or less directly to an endocrine dysfunction. None of these authors, however, examined their patients to prove that a disturbance in the glands of internal secretion was present, and their opinions were based on clinical experience only.

The perfecting of the Frank and Goldberger [7] tests has made it possible to examine directly the functions of the pituitary glands and of the gonadal apparatus and to determine if an endocrine imbalance is present more frequently in patients with acne than in others. Rosenthal and Kurzrok [8] found complete absence of estrogenic substance in the urine of 27 of 34 patients with acne, the specimens being examined during various phases of the menstrual cycle. A basis of comparison of estrogenic content of the blood in normal women, i. e., women without acne, is given in the works of Frank and Goldberger, Neustaedter [9] and Mazer and Goldstein.[10] A normal amount of estrogenic substance in the blood during the premenstrual period has been found by Frank and Goldberger in 72 per cent of normally menstruating, fertile women. Neustaedter found normal amounts in 75 per cent, and Mazer and Goldstein in 85 per cent, of normal women. Rosenthal and Neustaedter then ascertained the presence of estrogenic substances in the blood of menstruating normal women who had an accompanying acne. They found a deficiency in the production of estrogenic substance in the blood in 93 per cent of a series of 29 women and concluded that a deficient secretion of the follicle-ripening hormone may prove to be the direct or indirect cause of one type of acne. Both a pituitary and a gonadal imbalance have been accused of being a causative factor in the production of acne vulgaris.

A study of 72 cases of well developed acne vulgaris was undertaken by us to prove or disprove the presence of endocrine imbalance and to ascertain the benefit of treatment with glandular preparations alone or in combination with roentgen rays. Glandular preparations were also used in cases of severe acne recurring after a sufficient number of roentgen treatments extending over a period of two years had been given.

7. Frank, R. T., and Goldberger, M. A.: Demonstration of the Female Sex Hormone in Human Blood, J. A. M. A. **87**:1719 (Nov. 20) 1926.

8. Rosenthal, Theodore, and Kurzrok, Raphael: Excretion of Estrin in Acne, Proc. Soc. Exper. Biol. & Med. **30**:1150 (May) 1933.

9. Neustaedter, in Mazer and Goldstein.[10]

10. Mazer, Charles, and Goldstein, Leopold: Clinical Endocrinology of the Female, Philadelphia, W. B. Saunders Company, 1932.

It is generally conceded that the functional phases of the human female (puberty and menstruation so far as this study is concerned) are governed mainly by the development of the ovarian function, which is, in turn, controlled by fluctuations in function of the anterior lobe of the pituitary and to a lesser extent by other related glands of internal secretion. All writers agree that only in exceptional instances does the dysfunction of the adrenal, thyroid and parathyroid glands and of the pancreas enter into the etiology of acne. The thymus and pineal glands can be left out of consideration entirely. The search for an endocrine imbalance must center then on the pituitary gland and on the gonadal apparatus (the ovaries and testes). Frank and Goldberger's tests make it possible to examine the function of these glands with a definite degree of certainty.

These tests, which we have used with slight modifications by Mazer and Goldstein and a few minor technical modifications of our own, permit a satisfactory and efficient determination of the estrogen content of the blood as well as a quantitative demonstration of the anterior pituitary gonad-stimulating hormone from the same sample of venous blood. It must be remembered that the amount of estrogen in the circulating blood of women varies to a considerable extent during the menstrual period, its presence and in its various concentrations being most readily demonstrated from twenty-four to forty-eight hours before the onset of the menstrual flow, although in the majority of normal women the substance may be demonstrated with 40 cc. of blood in the first seven to ten days preceding the onset of the menses.

EXPERIMENTAL METHODS

The details of the technic followed in the study of the cases herein reported are as follows:

Forty cubic centimeters of venous blood was withdrawn from the vein in the antecubital fossae of the arm; a 50 cc. glass syringe with a 17 gage needle was used. It was found advisable to moisten the syringe with 2 per cent sodium citrate in physiologic solution of sodium chloride.

This blood was then poured evenly over the bottom of a large evaporating dish, which had been previously covered with 30 Gm. of powdered anhydrous sodium sulfate ($Na_2 SO_4$). The blood and powder were thoroughly and quickly mixed with a metal spatula until a thick paste was obtained. This paste was quickly dried at room temperature, or 37.5 C., and during the first part of the drying process it was thoroughly stirred to prevent the formation of large hard lumpy masses.

When drying was completed the mass was finely ground and triturated in a porcelain mortar and pestle.

This produced a fine red-brown powder, which was placed in a separatory funnel and shaken with 100 cc. of chemically pure ether for ten minutes. This

mixture was allowed to settle for ten or fifteen minutes, and the supernatant ether was syphoned off and preserved. To the residual sludge an additional 75 cc. of ether was added, and the shaking process was repeated for from ten to fifteen minutes. After settling had occurred the supernatant ether was again poured off and added to the previously obtained extract.

The ether extract was then placed in an evaporating dish and the ether driven off as rapidly and completely as possible, a water bath being used if necessary.

The residual sediment was mixed with 2 cc. of sterile distilled water to produce an emulsion, which was then ready for use.

The water emulsion was divided into three equal parts and injected into a castrated adult female white mouse, care being taken that there was no leakage from the needle tract by making the injection near the caudal region and carrying the needle subcutaneously to the region of the scapula. After the injection was completed 0.25 cc. of sterile distilled water was drawn through the needle and syringe in order to preserve any of the active substance remaining, and this was added to the residuum in the stock bottle.

Vaginal smears were made twenty-four hours after the last injection and on the following morning and afternoon, the final reading being made forty-eight hours after the last injection. As a matter of precaution, we have followed the suggestion of Mazer and Goldstein and made a late smear seventy-two hours after the last injection to detect a possible delayed reaction or the persistence of a strong reaction.

It has been stated that more uniform results may be obtained when a duplicate test is performed simultaneously by using two test animals and withdrawing 80 cc. of blood, for the reason that not all animals respond equally to the stimulating effects of the estrogenic substance. This is true when newly castrated animals are used. We have found, however, that uniform results may be obtained by the use of castrated mice in which the hormone has already been proved to produce the characteristic vaginal changes. With a large number of such animals uniform and consistent results may be obtained with repeated injections of different blood extracts, spaced with intervening periods of rest for the animals.

Care should be taken in making the vaginal smears to avoid the vulvar skin when the platinum loop is introduced into the vagina of the mouse, as squamous epithelial cells may be carried into the vaginal secretion. When the animal shows the beginning of estrus, indicated by an increase in small nucleated epithelial cells, vaginal smears should be made at least every eight hours to avoid overlooking a true state of estrus.

The smears are stained with polychrome methylene blue or with some other suitable dye, and the following interpretations may be obtained from the different reactions exhibited:

1. A strongly positive reaction for estrogenic substance, showing non-nucleated epithelial cells almost exclusively, a reaction obtained usually in late pregnancy.

2. A positive reaction (normal premenstrual level), manifested by the presence of nucleated and non-nucleated epithelial cells.

3. A weakly positive reaction (threshold level), manifested by the presence of nucleated epithelial cells only.

4. A weakly positive reaction (subthreshold level), manifested by the presence of small nucleated epithelial cells, leukocytes and mucus.

5. A negative reaction, manifested by the presence of an occasional epithelial cell, mucus and an abundance of leukocytes.

A gonad-stimulating hormone is to be found in the blood of every adult, but the usual method of injecting small quantities of blood serum into immature rats is not delicate enough to reveal its presence in blood from the majority of women who are menstruating regularly, or from males whose gonadal efficiency has been demonstrated.

Contrary to certain objections, we have found the method of Frank satisfactory for the demonstration of the gonadotropic hormone in the blood of nonpregnant women. The technic which we use is as follows:

1. After the estrogenic substance has been extracted from the blood in the manner described the remaining sludge is dried again and ground into a powder and shaken for from ten to fifteen minutes in 200 cc. of 60 per cent alcohol.

2. The insoluble sodium sulfate is then centrifugated until the supernatant fluid is perfectly clear.

3. The supernatant fluid is evaporated to about one-half its volume, centrifugated again and then evaporated to dryness.

4. This dry residue is then dissolved in 6 cc. of sterile distilled water, divided into six individual doses and injected subcutaneously into an immature female rat over a period of forty-eight hours.

5. At the end of four days the animal is killed, and the ovaries are removed, fixed in solution of formaldehyde and embedded in paraffin; serial sections are made and stained for microscopic examination.

To obtain the best and most uniform results, it is best to make a number of these tests at the same time, using animals of the same litter, preferably of the Wistar strain. Two animals should be used as controls.

Some difficulties may be encountered in observations on pregnant women when the gonadotropic hormone is present in considerable quantities, although the excess is usually eliminated by the kidneys. Congenital or other defects of the ovary may give rise to a stimulation of the pituitary gland, such as is not infrequently seen in amenorrheic and oligomenorrheic women.

Reactions obtained with this technic may be classified as follows:

Reaction 1: The ovaries show well defined maturation of the follicles with evidence of ovulation.

Reaction 2: The ovaries show well defined maturation and enlargement of the follicles with evidence of ovulation and hemorrhage.

Reaction 3: The ovaries show pronounced maturation of the follicles with the formation of corpora lutea and the embedment of the ova in the lutein tissue.

Reaction 4: There is imperfect maturation of the follicles without evidence of ovulation.

TABLE 1.—*Outline of Observations on Patients with Acne* *

I.	Clinical Appearance of Eruption	1. Usual types: (a) comedo, (b) acne papulosa, (c) acne pustulosa, (d) acne indurata 2. Unusual involvement: (a) ears, (b) sides of the neck, (c) lower portion of the back (d) buttocks 3. Unusual severity in usual sites 4. Degree of seborrhea
II.	Systemic disorders	
III.	Other stigmas of endocrine dysfunction	
IV.	Previous treatment	1. Number of roentgen treatments, etc. 2. Vaccine therapy 3. Nonspecific therapy
V.	Pelvic examination of nonvirgin patients to rule out:	1. Tumors 2. Malformations, etc.
VI.	Laboratory examinations	1. Determination of hemoglobin content of the blood 2. Determination of basal metabolic rate 3. Frank and Goldberger tests (a) pituitary test (1) excellent, (2) poor, (3) good, (4) excessive (b) gonadal test (1) positive, (2) weakly positive (3) very weakly positive, (4) negative
VII.	Menses	1. Type (regular, irregular) 2. Onset at age of (regular, irregular) 3. Duration 4. Flow (excessive, scanty, normal, clots [no. of days]) 5. Subjective symptoms
VIII.	Treatment	1. Gonadotropic substance from urine of pregnant women 2. Theelin 3. Number of roentgen treatments
IX.	Progress notes after 2 weeks, 4 weeks, 6 weeks, 8 weeks, 12 weeks	
X.	Recurrence and result of further treatment with glandular preparations	
XI.	Special remarks	

* In addition to the observations outlined the name, height, sex, age and marital status of the patient were recorded.

Reaction: This is a negative reaction, no maturation of the follicles or ovulation having occurred.

These reactions appear to be dependent on three factors: the concentration of the gonadotropic hormone in the blood, the person tested and the susceptibility of the laboratory animals.

Our series of 72 patients was composed of 12 males and 60 females, all of whom had a well developed type of acne. Table 1 shows the type of record kept on each case. Before organotherapy was begun all the patients were examined to determine whether any disturbance in the function of the thyroid gland, the pituitary gland and the gonadal

apparatus was present. The hemoglobin content of the blood was estimated for each patient, and the mild anemia found in 13 patients was first treated. The basal metabolic rate was practically normal in all the patients, and it was concluded that the activity of the thyroid gland has no relation to the production of acne. Table 2 shows that according to the Frank and Goldberger test 41 per cent of the males showed a dysfunction of either the pituitary gland or of the gonads, while 58 per cent were normal. One patient showed a deficiency of both glands. Seventy-eight per cent of the females showed a deficiency of the pituitary

TABLE 2.—*Results of the Frank and Goldberger Test for Endocrine Dysfunction*

No. of Cases	Pituitary Dysfunction	Gonadal Dysfunction	Pituitary and Gonadal Dysfunction	Normal
		Endocrine Dysfunction in Males		
12	2	3 (total 41%)	1 (8%)	7 (58%)
		Endocrine Dysfunction in Females		
60	6	41 (total 78%)	4 (7%)	13 (21%)

TABLE 3.—*Comparison of Menstrual Disorders and Results of Frank and Goldberger Tests in Females*

Type of Eruption	No. of Cases	Endocrine Dysfunction but no Menstrual Disorders	Endocrine Dysfunction with Menstrual Disorders	No Endocrine Dysfunction or Menstrual Disorders
Severe acne cystica and acne indurata	12	4	8	0
Mild acne indurata	14	10	0	4
Severe comedones with seborrhea	14	6	6	2
Severe papular and pustular eruption	6	4	2	0
Moderately severe papular eruption	10	5	0	5
Unusual distribution	4	0	2	2
Total	60	29 (48%)	18 (30%)	13 (21%)

glands or of the ovaries, while 21 per cent were normal. Four girls showed a deficiency in the function of both glands. In order to prove the validity of our methods, control tests were done 11 times, in 4 instances on presumably normal persons and in 7 on patients with other dermatoses, such as eczema, neurodermatitis and psoriasis. All these controls had a normal menstrual history, and a normal amount of estrogenic substance was found in the blood obtained during the premenstrual period of all but 1 of the controls. These figures agree with the observations of other authors.

Table 3 shows that 30 per cent of all the female patients had an endocrine dysfunction and an accompanying history of menstrual disorders, while 48 per cent had endocrine deficiency without any menstrual disturbance.

Our patients were divided into three groups as follows:

Group A.—This consisted of 14 patients with severe recurrent acne formerly treated with one or two full courses of roentgen radiation, given by competent dermatologists or roentgenologists, totaling from twelve to twenty-six weekly treatments over a period varying from eighteen to thirty months.

Eight of these patients had severe papulopustular acne involving the face, sides of the neck, chest and back. All showed endocrine deficiency, the deficiency being of the pituitary gland in 2 and of the gonadal apparatus in 6. The average age was 18½.

There was a subgroup consisting of 6 patients with severe acne indurata and acne cystica. Two showed deficient pituitary function while 4 were lacking in gonadal secretion. The average age was 21.2. It is interesting to note that the cases of acne were equally divided between the sexes.

Group B.—This comprised 35 patients previously untreated (except for local applications, useless vaccines, dietary regulation and similar measures). The disorder in these patients was of unusual severity or of unusual extension. This group was divided into three subgroups:

I. Patients with Pituitary Deficiency: This subgroup consisted of 2 males and 2 females of an average age of 19.

II. Patients with Gonadal Deficiency: This subgroup consisted of 3 males and 14 females of an average age of 19.2.

III. Patients with Normal Endocrine Function: This subgroup was determined according to the tests of Frank and Goldberger. It comprised 14 patients, all of whom were females. Patients in this subgroup were treated with a combination of roentgen and endocrine therapy.

Group C.—This comprised 23 previously untreated patients with all types of acne who received treatment with glandular preparations only. This group was divided into two subgroups:

I. Patients with Acne Indurata: This subgroup comprised 6 patients, 3 of each sex, whose average age was 18.7. There was no pituitary dysfunction, but all the patients showed a gonadal deficiency. Endocrine imbalance seems to be the rule in persons with severe types of acne indurata and acne cystica.

II. Patients with Moderately Severe or Severe Papulopustular Acne with Large Numbers of Comedones and Marked Seborrhea: This subgroup comprised 17 patients. None had pituitary dysfunction but 11 showed a gonadal deficiency. In the remaining 6 our endocrine tests gave normal results. All the patients in this group were females.

ANALYSIS OF THE TYPES OF TREATMENT USED AND OF THE RESULTS OBTAINED

Since we accept the view, held by all authorities on this subject, that the functions of the testicles and ovary are governed entirely by the gonad-stimulating hormone of the anterior lobe of the pituitary, all the patients in our three groups were treated by injections of 2 cc. of gonadotropic substance from the urine of pregnant women [11] three times

11. The preparation used was antuitrin S.

weekly for a period of three months regardless of the fact that we could demonstrate a pituitary deficiency, a gonadal deficiency or both. Fourteen patients with acne who had a normal menstrual history and a normal endocrine function according to the Frank and Goldberger test were also treated with the gonadotropic substance. It was used continuously, including the period of menstruation, without any untoward effects except for tenderness localized at the site of the first two or three injections in about one third of the patients.

After three months of treatment with the gonadotropic substance[11] had failed to bring about improvement in the acne, injections of theelin were given to both the male and the female patients who showed a gonadal imbalance. After an initial injection of 500 units of theelin, a dose of 2,000 units was given three times weekly for a period of three months. Theelin, from the Greek *"theelus"* meaning female, is the nonproprietary designation for the estrogenic substance isolated according to the process of Doisy by continuous butyl alcohol extraction from the urine of pregnant women. The estrogenic substance acts on the uterus, vagina, and vulvar skin of the castrated immature animal. Normally it has no effect on the ovary itself. On the contrary, Allen has definitely shown that large doses cause a diminution in the size of the ovary and in the number of follicles. Estrogen also causes enlargement of the breasts and development of retarded secondary sex characteristics. It may be noted here that 21 per cent of the girls in our series who received theelin showed a retardation of from six to twelve days in the appearance of their menses and painful menstruation with a scanty flow, factors which had not existed previously. This clinical observation seems to bear out Allen's observation on experimental animals. None of our patients received any local treatment, and no instructions were given with reference to diet or the regulation of constipation.

In group A, consisting of 14 patients formerly treated with sufficient roentgen radiation, 8 patients with papulopustular acne and seborrhea responded nicely to injections of the gonadotropic substance from the urine of pregnant women. Improvement in the texture of the skin and disappearance of the eruption were noted after for weeks. At the end of three months the eruption had entirely disappeared. Two months after treatment was stopped 50 per cent of the patients exhibited a recurrence in the form of a less severe eruption of pustules and papules. The eruption in these patients cleared after further two months' treatment with the aforementioned gonadotropic substance, and the skin had remained clear for four months. It is to be noted that all the patients in this division of group A showed pituitary or gonadal deficiency.

The remaining 6 patients with previously treated acne indurata and acne cystica showed no improvement after three months of treatment

with the gonadotropic substance and a later course of injections of theelin used over a period of three more months. Therapy with these glandular preparations was considered a flat failure for this subgroup although every patient showed either pituitary or gonadal deficiency.

The patients in group B—35 previously untreated patients—were all given injections of the gonadotropic substance from the urine of pregnant women three times weekly for a period of three months along with weekly exposures to roentgen rays in doses of 75 roentgens. After a comparison of the results in patients with the same type of eruption receiving roentgen radiation alone, it was concluded that the results obtained with the combined therapy were in no way superior to those obtained with roentgen radiation only, since 80 per cent of the patients were considered cured at the end of three months. The remaining 20 per cent were then treated with theelin three times weekly for a further three months, no improvement resulting. Attention is called to the fact that of the 35 patients 4 showed a pituitary deficiency and 17 a gonadal deficiency, while 14 were normal according to the results of the Frank and Goldberger tests. Of the 7 patients that were listed as not responding to the combined therapy with roentgen rays, gonadotropic substance and theelin, 4 showed a gonadal deficiency and 3 were normal.

In group C, consisting of 23 previously untreated patients, 6 patients with acne indurata showing a gonadal deficiency were treated three times weekly with the gonadotropic substance from the urine of pregnant women for three months and then with theelin for a further period of three months without improvement. The remaining 17 patients had severe pustular and papular acne and were treated for six months in the same manner. Eleven of these patients showed gonadal deficiency with marked disturbance in menstruation and had an acute type of eruption. After two months of treatment with the gonadotropic substance the menstrual symptoms improved greatly and the eruption improved moderately. Although menstruation remained normal, at the next period the eruption became as severe as it had been in the beginning of our observation. Further treatment with the gonadotropic substance and with theelin over a period of four months had no influence on the eruption. The remaining 6 patients with pustular acne had a normal hormonal balance and showed no improvement after six months of treatment with the gonadotropic substance from the urine of pregnant women and theelin.

CONCLUSIONS

Thyroid dysfunction rarely shows any relation to acne vulgaris.

By the use of the Frank and Goldberger tests it was shown that in a series of 72 patients with well developed acne vulgaris, 41 per cent of the males and 78 per cent of the females showed deficiency of

the anterior lobe of the pituitary or of the gonads. Eight per cent of the males and 7 per cent of the females exhibited a deficiency in the function of both glands. Among the males the pituitary was deficient two-thirds times as often as the gonads, while among the females gonadal deficiency occurred seven times as frequently as pituitary deficiency. Of the 60 females studied, only 30 per cent had any history of menstrual disturbances, although 78 per cent of the total showed an endocrine deficiency.

Patients with recurrent papulopustular acne formerly treated with sufficient roentgen radiation responded nicely after one or two courses of three months' treatment with the gonadotropic substance from the urine of pregnant women. Patients with recurrent acne indurata and acne cystica formerly treated with sufficient roentgen radiation showed no improvement after six months of treatment with the gonadotropic substance and theelin. It is to be noted that all the patients in these two groups showed an endocrine imbalance.

No advantage over roentgen treatment alone was observed when a group of 35 patients were treated with the combination of roentgen rays and glandular preparations (gonadotropic substance [11] and theelin).

In a group of 23 previously untreated patients therapy with glandular preparations alone had no effect on the course of the acne, although menstrual disturbances cleared up promptly.

It is concluded that therapy with glandular preparations is of no value in the treatment of acne vulgaris except in that of the recurrent papulopustular types which have been previously treated with sufficient roentgen radiation.

ABSTRACT OF DISCUSSION

DR. MARION B. SULZBERGER, New York: The work of Dr. McCarthy and Dr. Hunter is to be commended because of the presentation and careful scientific approach to the subject, which are important. In the service of Dr. Wise at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, in my office and at the Montefiore Hospital, the endocrinologic approach to acne has been studied for five years. My conclusions are in accord with those of Dr. McCarthy and Dr. Hunter and are, unfortunately, diametrically opposed to some of those in the recent literature. One must admit that acne vulgaris is based, in all probability, on an endocrine dysfunction. This fact has been evident clinically for many years. Even before Dr. Bloch's studies were published dermatologic publications stressed the rôle of the gonads in the production of acne. Dr. McCarthy and Dr. Hunter's studies establish this still further. However, there is no longer any doubt in the minds of all who have attempted to apply this gonadal approach to acne that while the gonadal endocrinologic approach will doubtless be of value in future therapy, this approach as it can be employed today is practically useless in the majority of cases of acne vulgaris. I have reached this conclusion after five years' trial of the most potent anterior pituitary, anterior pituitary-like and ovarian preparations.

At this point it may be well to state that there is little doubt that certain foods have a deleterious influence in some cases of acne. For example, I have been able to demonstrate the regular production of exacerbations by ingestion of chocolate in some cases and by that of nuts or cheese in others; certain other foods have also been incriminated. Furthermore, certain drugs, such as iodides and bromides, are known to produce acne (iodized salt is, in my experience, a frequent offender).

But—and this "but" really sums up the purpose of my discussion—neither endocrine treatment nor diet is at present a truly valuable therapeutic approach in the literally hundreds of thousands of cases of ordinary acne vulgaris. In the present audience there can surely be no one who doubts that the classic dermatologic treatment is not only the safest but the surest and the best. In average cases of acne vulgaris, this treatment produces rapid improvement, and it accounts for marked alleviation or complete cessation of manifestations in over 90 per cent of all cases. This dermatologic approach, of course, includes the proper use of roentgen therapy. It seems unnecessary to state that only dermatologists should give this treatment; for only the correct dermatologic technic and, what is most important, only the special dermatologic apparatus give the maximum of safety combined with the best results.

DR. J. GARDNER HOPKINS, New York: I was much interested in this paper because my co-workers and I have been studying this problem at the Vanderbilt Clinic for some time. I think one has to separate the consideration of the evidence as to the etiology of acne and the evidence of the effectiveness of the treatment used. Physicians probably agree that the evidence obtained from the history of patients indicates an endocrinopathic basis for acne. That fact should stimulate intense work in that direction, such as that which Dr. McCarthy and Dr. Hunter have done. In addition, from what I gathered from the figures on the screen, a deficiency in gonadal secretion was found in 78 per cent of the cases observed by Dr. McCarthy and Dr. Hunter, a percentage nearly as high as that obtained by Rosenthal and Kurzrok with a slightly more sensitive method. At least in regard to females one can be relatively sure that there is a deficiency in cases of acne, namely, one of ovarian secretion. As to males, my co-workers and I have had no experience, but I understand that Dr. McCarthy has. As to the pituitary gland, I fail to see how one can draw conclusions. Normal women of the age of those who usually have acne do not excrete a measurable amount of gonadotropic hormone, and therefore there is no way of determining a pituitary deficiency. One can tell about the excessive but not about the deficient secretion.

This leaves little to guide one in therapy, because it is not known where the primary deficiency is—in the pituitary gland, in the ovary or somewhere else. It is known only that there is evidence of marked deficiency somewhere in the chain. If one seeks guidance from endocrinologists as to which glandular preparation to give and what frequency and dose to prescribe, it becomes evident that the greatest degree of uncertainty and disagreement exists. Consequently, I do not think that the failure to obtain striking therapeutic success in a series of patients treated with one glandular preparation in one dosage should discourage one from attempting any endocrine treatment. I have no statistical evidence to present, for my co-workers and I have been feeling our way for several years with various preparations and dosages. We have not yet felt that we had a schedule of treatment that promised to give results if it were applied in a large enough number of cases to secure statistical evidence. In individual cases the outcome has been encouraging. In patients who could not come in for roentgen

therapy or treatment at the office but who could take estrogenic substance by mouth I have seen striking and lasting improvement. One was a girl who before treatment with estrogenic substance was begun had received without appreciable benefit the maximum amount of roentgen therapy that the physician who treated her thought she could tolerate.

Dr. Lloyd W. Ketron, Baltimore: I wish to add a report of my small experience with the gonadotropic substance from the urine of pregnant women in cases of acne, the results of which were negative.

In considering glandular and other types of internal therapy in the treatment of this disease, one is likely to lose sight of the fact that the primary cause is bacterial. In examining fresh pustules one always finds micro-organisms (mainly acne bacilli and staphylococci) in the leukocytes and lying free in the exudate. Abscesses can be produced in both men and animals by intracutaneous injection of these organisms either dead or alive, so that one cannot escape the conclusion that they produce a local inflammatory reaction when they escape into the tissues in a person with acne. Since these organisms live to a certain extent in the skin of practically all persons, particularly of those at the age of puberty, when the focal supply is most abundant, one must accept the fact that predisposing factors are present in order to explain why only a certain proportion of young people contract the disease. Internal disorders, improper diet and similar factors influence the character and, in some cases, the abundance of the sebaceous flow. Whether or not the follicular orifice becomes blocked depends on the rate of sebaceous flow and on the rapidity of bacterial growth. The flow may be abundant, but the rate of growth may be too slow to produce blocking; this would explain why some patients with seborrhea do not contract acne.

After blocking occurs by a superficial or deep comedo or pultaceous mass, the pressure from beneath, or perhaps other irritants, may cause an erosion of the follicular sheath with a liberation of bacteria and other foreign material into the tissues. This produces a pustule or nodule, depending on the depth at which blocking has occurred.

Dr. F. J. Eichenlaub, Washington, D. C.: Dr. McCarthy and Dr. Hunter should be congratulated on their careful survey of their series of patients, and I think that they and others should carry on this work. I hope that this article will soon be published so that the indiscriminate application of organotherapy to patients below the age of puberty will be discontinued until it has been placed on a firm physiologic basis. I feel that until it is known that interference with the normal processes of puberty will not seriously affect the development, mental reactions and character of the patient in later life, one is not justified in using powerful endocrine products in the treatment of generally self-limited disease.

Dr. Earl D. Osborne, Buffalo: Like Dr. Hopkins, my co-workers and I have been feeling our way along; we have treated 76 patients. Our experience has been about the same as his. There was no effect in patients with cystic acne. In patients treated with roentgen therapy we thought we obtained excellent results for a time, but observations over a period of a year or two later have discouraged me about the efficacy of the gonadotropic substance from the urine of pregnant women.

I think that attention should be called to the experimental work of Collip as to the disadvantages of that gonadotropic substance. This is considered so important that a few months ago *The Journal of the American Medical Association* published an article pointing out that Collip had reported that the long-continued use of this substance produced no effect on the acne but that it produced decided

effects on the sex glands. One must realize how confusing it is to have an article appear shortly afterward in the same journal recommending the use of large doses of the same preparation. That appears rather incongruous to me. I have seen patients who had received two and three series of treatments with the gonadotropic substance from the urine of pregnant women (antuitrin S) since that article appeared. In some the treatment had been started some time before that. I wish to call the attention of the members to the work done in pointing out the dangers accompanying the use of these preparations.

DR. LEE MCCARTHY: I thank the members for their discussion. Dr. Sulzberger has expressed the entire thought of our paper in his discussion, and I am pleased that his results have coincided to such an extent with ours.

I agree with Dr. Ketron's conception of the etiologic rôle played by the acne bacillus in the actual production of acne.

In his discussion Dr. Hopkins stated that he felt that he had had some success with the use of estrogenic substance in patients who were unable to receive roentgen therapy. This success is difficult to explain from a purely physiologic point of view. It is possible that there is some generalized systemic effect derived from these hormones which is not yet understood. Dr. Osborne has done well to call attention to the possible dangers in the uses of the glandular preparations. This is a serious side of the question and deserves careful study.

With reference to the control for the Frank and Goldberger tests, I wish to state that we used 11 controls, 4 of whom were normal and 7 of whom had cutaneous disorders. All these persons responded normally. Four of those with a cutaneous disorder were young women with chronic eczema on the backs of the hands. These patients showed absence of estrogenic substance in the blood.

In closing, I wish to emphasize that none of our patients received instructions as to diet, routine of living or local applications.

VESICULOBULLOUS DERMATITIS FOLLOWING ADMINISTRATION OF ARSPHENAMINE

REPORT OF A CASE

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Eczematous weeping eruptions and vesicular or bullous eruptions are uncommon forms of dermatitis due to the administration of arsenical compounds.[1] The more usual eruptions are the zoster-like eruptions, those resembling lichen ruber planus, those of erythema multiforme type, the fixed exanthems due to arsphenamine and the well known exfoliative dermatitides. The vesicular and bullous lesions of this unusual type of arsenical dermatitis often terminate in pyoderma. This complication usually comes on during the apparent healing of the eruption and is rarely seen in bullous eruptions except when they are due to arsenic.[2]

In the epidemic of arsenic poisoning in the north of England in 1900 bullous eruptions were rarely seen,[3] and when they occurred it was usually as delayed complications, developing as late as six weeks after the poisoned beer had been ingested.[4]

Klauder[5] mentioned vesicular dermatitis, and Bauer[6] referred to a pemphigoid eruption which resulted from the administration of arsphenamine. The lesions usually involved the hands and feet. Dreyfus,[7] in discussing reactions to arsphenamine, reported the case

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of a patient who exhibited pea-sized vesicles, some of which were hemorrhagic, on the hands and feet along with a macular eruption on the trunk.

Two deaths from pyemia have been reported. One followed sepsis which occurred after the development of hemorrhagic bullae during the course of a dermatitis due to sulfoxylate.[8] The other resulted from septicemia occurring after abscesses had developed at the site of preexisting bullous lesions.[9] Vesicular eruptions and similar eruptions complicated with superimposed furuncles have also been reported as instances of arsphenamine dermatitis.

The eruptions due to arsenic have been attributed, as a rule, either to an absolute or a relative overdosage or to an idiosyncrasy to arsenic on the part of the patient.[10]

In the following case the individual and total doses of arsphenamine were smaller than the amount usually administered in similar cases.

REPORT OF A CASE

A housewife aged 25 had been seen in various outpatient departments of the clinics of the university since Sept. 17, 1928. In October 1928 a cyst was removed from the right ovary because of excessive vaginal bleeding and abdominal pain. The Wassermann and Kahn reactions of the blood were negative at that time. In June 1929 a diagnosis of salpingo-oophoritis was made, and in December 1930, one of acute gonorrheal salpingitis. Four doses of high voltage roentgen therapy and two blood transfusions were given in January 1931 to combat a severe secondary anemia which had followed excessive menstrual flow during the entire previous year. During the two month interval after her discharge from the hospital in January the patient was seen in the clinics for patients with diseases of the chest, blood and eyes. A chronic iridocyclitis of undetermined etiology had developed in the meantime. During March she was again hospitalized for three weeks because of abdominal discomfort. This discomfort was attributed to functional colitis; it improved under medical management.

Three months later, on June 18, the patient returned to the otolaryngologic clinic because of a lesion on the left tonsil which, she stated, had been present for three weeks. She was first seen in the dermatologic clinic the following day. The lesion on the tonsil and one on the right portion of the buccal mucosa were eroded papules. Dark field examination gave positive results, and a diagnosis of early syphilis was made. The Wassermann and Kahn reactions of the blood serum were repeatedly strongly positive. The patient was hospitalized, and treatment was instituted.

She received 0.2 Gm. of arsphenamine intravenously and 1 cc. of bismuth subsalicylate in oil (containing 0.058 Gm. of elemental bismuth) intragluteally. Three days later 0.5 Gm. of arsphenamine was given, and four days after that the third dose of 0.4 Gm. of arsphenamine and another dose of 1 cc. of bismuth subsalicylate were administered. Arsphenamine from the same ampules was given to other patients along with bismuth subsalicylate, no untoward reaction occurring.

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9. Heyn, W.: Zur Frage der Salvarsandermatitis, Deutsche med. Wchnschr. **48**:767 (June 9) 1922.

10. Birnbaum, G.: Neuere Untersuchungen über die Salvarsanschädigungen der Haut, Zentralbl. f. Haut- u. Geschlechtskr. **49**:97, 1934.

About three hours after the third injection of arsphenamine the patient became nauseated and vomited several times. She also had headache, generalized aching pains, pain in the cervical and axillary lymph nodes and diarrhea. She stated that her temperature was 104 F. at this time. On the morning of the next day she noticed a bright red rash on the face, trunk and extremities. She felt somewhat better when she was seen in the clinic the following day, the third day after the last injection of arsphenamine. Her temperature was 100.8 F., and the pulse rate was 110. There was a more or less generalized brightly erythematous diffuse maculopapular exanthem involving the face, back, abdomen, arms and legs. The glands in the cervical region were enlarged and tender. The patient was advised to remain in bed and to take a liquid diet and force fluids. She was given sodium bicarbonate and acetylsalicylic acid by mouth. When she was seen again, two days

Vesiculobullous dermatitis following administration of arsphenamine.

later, the erythema was more marked, and the temperature was 101 F. She was advised to take colloid baths. The so-called imperial drink (an aqueous solution of potassium bitartrate, sweetened and flavored with lemon peel) was prescribed to be taken by mouth, and 1.5 Gm. of sodium thiosulfate was given intravenously. A severe neuritis then developed. The patient did not return to the clinic for eleven days; when she returned she stated that the original dermatitis had subsided and had remained away for four days, when another eruption had appeared. At the time of examination—thirteen days after the last injection of arsphenamine —she presented an erythematovesicular eruption on the trunk, feet and arms. There was oozing about the anus and umbilicus. Itching was marked. Six minims (0.36 cc.) of epinephrine was given subcutaneously, and the patient was admitted to the hospital. Two days later bullae appeared on the arms. Some of these lesions were hemorrhagic. The bullous lesions progressed in extent, and soon involved the face, trunk and extremities (figure). Crusts formed and fell off,

leaving large denuded areas on the back and shoulders. Some of the bullae became pustular, and small dermal and subdermal abscesses developed. During this time the temperature ranged from below normal up to 104.6 F., running a septic course. The patient was nauseated, retained little taken by mouth and had frequent watery stools. Abdominal pain was present.

Sodium thiosulfate was given intravenously every day in doses of 1 Gm. Alkalinization was effected by means of the solution of potassium bitartrate given by mouth. Colloid baths and calamine liniment were used locally to relieve the pruritus. Sedatives (codeine, sodium amytal, aminopyrine and morphine) were necessary to control the increasing restlessness of the patient. Her condition gradually became worse, and she died on the thirteenth day after her admission to the hospital, twenty-eight days after the last injection of arsphenamine.

Autopsy was performed, and the following observations were made: diffuse generalized sepsis and toxemia, with fatty degeneration of the liver, presumably resulting from arsphenamine intoxication; generalized pustular lesions of the skin with desquamative dermatitis; acute fibrinous perihepatitis, perisplenitis, and localized fibrinous pleuritis with abscess in the pleura of the middle of the right lung; acute hyperplasia of the spleen and parenchymatous and severe fatty degeneration of the myocardium and kidneys; acute pulmonary edema; early stage of hypostatic bronchopneumonia of the lower lobe of the right lung; bilateral serous pleuritis; acute distention of the right portion of the heart with generalized passive hyperemia; absence of the appendix, right fallopian tube and ovary; salpingo-oophoritis on the left side; acute toxic hemorrhagic infiltration in both adrenal glands, subacute myocarditis.

Microscopic examination of the skin showed the stratum corneum to be thickened and loose. The stratum granulosum was entirely absent. The stratum mucosum showed acanthosis with areas of intercellular edema. The papillae were large and edematous and showed marked vascular dilatation. In the dermis was considerable perivascular infiltrate.

COMMENT

The appearance of the initial erythema on the ninth day of arsphenamine therapy suggests that the eruption may have been the "erythema of the ninth day" described by Milian and recently reviewed by Keim,[11] although its duration was somewhat longer than usual. Onset of severe neuritis during the course of the erythema is unusual, and about a week later an unusually severe vesiculobullous eruption developed. The neuritis can in all probability be interpreted as due to arsphenamine, but its association with subsequent vesicular dermatitis suggests a connection between the two. It is universally recognized that the eruption of herpes zoster is due to efferent nervous impulses, and it has been shown that even so-called pure sensory nerves contain efferent fibers. Kreibich expressed the opinion that patchy exudative dermatitis, often called eczema but better designated as exudative neurodermatitis, is due to some disturbance of the cutaneous nerves. It is unusual, however, to see an eruption associated with arsenical neuritis; so in all probability the dermatitis in this case should be considered toxic and a manifesta-

11. Keim, H. L.: "Erythema of the Ninth Day," Arch. Dermat. & Syph. **31**: 291 (March) 1935.

tion of the general arsphenamine intoxication. As has been shown,[12] it is impossible to demonstrate arsenic in the skin of patients with arsenical poisoning; so the dermatitis may be caused by toxic substances formed elsewhere, for instance, in the liver.

The point of action of the toxin on the skin may have been either the epidermis or the dermis. It has been shown by Sulzberger and Wise [13] and by others that certain patients show positive reactions to patch tests with the arsphenamines, signifying epidermal sensitization of the type seen in the eczema-dermatitis venenata syndrome. Other patients show positive reactions to scratch or intradermal tests, signifying a hypersensitive dermis. A vesiculobullous reaction is seen more frequently in patients with epidermal hypersensitiveness, but an intense inflammatory reaction originating in the dermis may at times be bullous. No cutaneous tests had been made on this patient.

The influence of focal infection on the development of arsenical dermatitis has been discussed by Stokes and Cathcart [14] and by others. This patient had had salpingo-oophoritis followed a year later by acute gonorrheal salpingitis. During the following year she had chronic iridocyclitis of undetermined origin. In addition to her infections she had also had functional colitis, which indicates a background of neurocirculatory instability, a condition predisposing to sensitization.

Death was evidently due to the general toxic degeneration of the vital organs, presumably of arsenical origin, but evidences of infection (pleural abscess and fibrinous peritonitis) suggest that an infectious complication was present.

SUMMARY

An unusual vesiculobullous eruption followed administration of arsphenamine. An "erythema of the ninth day" was followed by severe neuritis and later by severe vesiculobullous dermatitis. Death resulted from toxic degeneration of internal organs. Evidence of systemic pyogenic infection, possibly secondary to the dermatitis, was present.

12. Tannenholz, H., and Muir, K. B.: Methods for Microchemical Demonstration of Arsenic in Tissues, Arch. Path. **15**:789 (June) 1933. Oppenheim, M., and Fantl, P.: Ueber Hauterkrankungen verursacht durch arsenhaltige Wandfarben: II. Versuche zum histologischen Nachweis von Arsenverbindungen in der Haut, Arch. f. Dermat. u. Syph. **170**:488, 1934.

13. Sulzberger, Marion B., and Wise, Fred: The Contact or Patch Test in Dermatology, Arch. Dermat. & Syph. **23**:519 (March) 1931.

14. Stokes, J. H., and Cathcart, E. P.: Contributing Factors in Postarsphenamine Dermatitis with Special Reference to the Influence of Focal and Intercurrent Infection, Arch. Dermat. & Syph. **7**:14 (Jan.) 1923.

LYMPHOGRANULOMA VENEREUM AND ASSOCIATED DISEASES

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A thorough review of the history of lymphogranuloma venereum is a study in itself. Hellerström's [1] monograph published in 1929 is suggested as a good historical survey. The 933 references to this disease given by Stannus [2] in 1933 afford an excellent bibliographic review. In this country DeWolf and Van Cleve [3] and Sulzberger and Wise [4] in 1932, Cole [5] in 1933 and Burney [6] in 1934 fully described the etiology, clinical course, pathology, differential diagnosis and past or present treatment of the disease. This article is presented to supply the available information gleaned from the clinical records, the individual study of some cases and the use of the specific antigen of Frei.

Until recently the diagnosis of lymphogranuloma venereum was rarely made in the navy; in fact, the name was not included in the navy's nomenclature of diseases until 1934. Formerly this disease was incorrectly diagnosed as one of the varieties of bubo, such as chancroidal bubo, gonococcic infection of the lymph nodes or "nonvenereal" bubo, the last-named diagnosis being especially frequent. A study was made of over 1,000 clinical records of these diseases, including so-called chancroid, selected from the files of the United States Naval Hospital at Canacao, P. I., and covering the years from 1923 to 1934 inclusive. In

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From the United States Naval Hospital.

In accordance with a recent decision of the National Conference on Nomenclature of Disease of the United States and of the American Medical Association, the term lymphogranuloma venereum is used to designate the condition formerly described as lymphogranuloma inguinale, lymphogranulomatosis inguinalis, lymphopathia venerea (—um), etc.

1. Hellerström, S.: Acta dermat.-venereol., supp. 1, 1929, p. 5.

2. Stannus, H. S.: A Sixth Venereal Disease, London, Baillière, Tindall & Cox, 1933.

3. DeWolf, H. F., and Van Cleve, J. V.: Lymphogranuloma Inguinale, J. A. M. A. **99**:1065 (Sept. 24) 1932.

4. Sulzberger, M. R., and Wise, F.: Lymphopathia Venereum (Lymphogranulomatosis Inguinalis of Nicolas, Favre and Durand), J. A. M. A. **99**:1407 (Oct. 22) 1932.

5. Cole, H. N.: Lymphogranuloma Inguinale: Fourth Venereal Disease; Its Relation to Stricture of the Rectum, J. A. M. A. **101**:1069 (Sept. 30) 1933.

6. Burney, L. E.: Ven. Dis. Inform. **15**:1 (July) 1934.

relation to the total admissions from all causes there have probably been more admissions for bubo at this hospital than at any other naval hospital.

No apparent difference was noted in the incidence according to months, seasons or years. The slight variations can be explained on the basis of total hospital admissions, increase in personnel and movements of the Asiatic fleet to other parts in the Far East.

The ages of the patients varied between 18 and 40, the vast majority being in the second decade. This is due to the youth of men in the navy and to the fact that there is a minority of men of the later age group, who are less vulnerable because of their mature experience and their marital status. The disease apparently affects persons of all races. The percentage of Filipinos in the navy is small. This accounts for the fact that there were only 10 Filipinos with bubo and 1 with chancroidal bubo in this series. Also the habits of Filipinos in the navy are quite different from those of the white marine. The former usually confines his venereal activity to a single woman and is rarely known as a "free lance." Inquiry at the Philippine General Hospital in Manila, P. I., however, brought out the opinion that this type of infection is quite as prevalent among Filipinos as among the white population.

The source of infection included women of all races—Filipino, Chinese, Russian, Japanese and white. Only 113 patients gave an accurate history of exposure from the racial standpoint.

The Frei test [7] as referred to in this article was carried out in a definite manner. The original antigen was supplied by Dr. Grace, of the department of dermatology and syphilology of the New York Hospital, Cornell Medical Center, on two different occasions. The antigen was prepared in the usual manner from pus from patients with lymphogranuloma venereum. This prepared antigen was tested on a patient known to have a positive reaction with the original antigen. Therefore, in each case there was a cross-check; that is, a known antigen was used to establish the diagnosis and the antigen was prepared from the pus, if available, and was in turn used on another patient known to have the disease.

In a number of cases a negative reaction during the state of anergy was due either to an associated disease like syphilis or to the early state of the disease; in these cases the reaction later became positive. Apparently the reaction becomes positive after the appearance of the adenitis in the development of the allergic state, or in about twenty-one days; however, in 1 case, in which tests were made every two weeks with different antigents, the reaction did not become positive until six months

7. Frei, Wilhelm: Klin. Wchnschr. **4**:2148 (Nov. 5) 1925.

after the appearance of the bubo. During this time the patient was restricted from all outside contact, and he had recurrent unilateral or bilateral adenitis appearing in different spots in the right or left inguinal region. He was ill for two hundred and twenty-one days with this infection.

Table 1 shows that 564 patients had a history of past venereal infection; 169 stated that they were free from venereal disease, and for 356 this factor was not recorded; in other words, less than one third of the patients were free from past venereal infection, which brings out the point that most venereal infections occur in the class of men prone to venereal habit. This is substantiated by the figures in table 5 which show that 126 of the 268 patients with a history of venereal disease were repeaters; i. e., about 50 per cent of them had had repeated attacks of a venereal disease. It is interesting to find that only a small number of repeated attacks of bubo or chancroidal bubo occurred. This may assist in substantiating the impression that lymphogranuloma venereum, assuming that most of the infections were probably this disease, leaves a lasting immunity.

The period of incubation before the appearance of the primary lesion has been estimated at from three to seven days. The average period of incubation of chancroidal bubo was twelve days, the period varying between one and sixty-seven days. In the patients with a positive Frei reaction the period of incubation was from two to nine days.

The four types of primary lesions described, namely, the herpetic, nodular and ulcerative types and the specific urethritis, were all observed in different cases. That the specific urethritis may more frequently be an actual open lesion is proved by the following case:

J. J. B., aged 30, who had received treatment at the veteran's bureau was admitted to the United States Naval Hospital in Brooklyn on March 13, 1933. There was a history of sexual intercourse with a white girl in New York on Feb. 25, 1933. No prophylaxis had been used, and a urethral discharge developed seven days after exposure. The past history disclosed only the usual childhood diseases. The patient manifested no systemic symptoms. The urethral discharge was seropurulent and moderate in amount and on repeated examinations revealed no gram-negative or acid-fast organisms. The culture was negative for gonococci. Inoculation of guinea-pigs gave negative results, according to later reports. Repeated examinations showed the smear to be made up mainly of pus cells, with a small number of gram-positive extracellular cocci.

Inflammation of the left inguinal glands developed twenty-one days after exposure and fourteen days after the appearance of the urethral discharge. Two days after the appearance of the adenitis there developed a balanoposthitis which responded to reduction and frequent soaks with hot saline solution. A hot water bottle was applied to the region of the left inguinal glands. At this time there were remittant attacks of mild fever and some general malaise. Examination of the

TABLE 1.—*History of Past Venereal Infection**

Nonvenereal Bubo (533 Cases)

	No. of Patients Infected						
	Once	Two or More Times	Less Than 1 Year Before Survey	Gonorrhea	Chancroid	Syphilis	Chancroidal Bubo
Gonorrhea	38	12	23	0	6	8	0
Chancroid	23	5	17	15	0	2	1
Bubo	3	2	1	3	2	3	0
Chancroidal bubo	6	0	1	4	0	2	0
Syphilis	43	1	7	26	4	0	0

	Cases
No disease (infection denied by name, symptoms and signs)	70
History of past illness not recorded in chart	140

Total number of patients with past venereal infection, 113 (gonorrhea, 121 cases; chancroid, 65 cases; bubo, 6 cases; chancroidal bubo, 8 cases; syphilis, 66 cases)
There was a past history of venereal disease for 183 patients (393 cases)

Chancroidal Bubo (569 Cases)

	No. of Patients Infected						
	Once	Two or More Times	Less Than 1 Year Before Survey	Gonorrhea	Chancroid	Syphilis	Chancroidal Bubo
Gonorrhea	63	25	15	0	12	6	0
Chancroid	15	8	6	6	0	1	0
Bubo	4	0	0	4	3	0	0
Chancroidal bubo	6	0	0	3	1	1	0
Syphilis	44	0	8	17	4	0	0

	Cases
No disease (infection denied by name, symptoms and signs)	61
History of past illness not recorded in chart	157

Total number of patients with past venereal infection, 194 (gonorrhea, 133 cases; chancroid, 55 cases; bubo, 4 cases; chancroid bubo, 6 cases; syphilis, 60 cases)
There was a past history of venereal disease for 255 patients (412 cases)

Chancroid (244 Cases)

	No. of Patients Infected						
	Once	Two or More Times	Less Than 1 Year Before Survey	Gonorrhea	Chancroid	Syphilis	Chancroidal Bubo
Gonorrhea	22	3	11	0	0	5	1
Chancroid	13	2	9	14	0	1	1
Bubo	3	2	1	4	0	0	2
Chancroidal bubo	1	0	3	1	0	1	0
Syphilis	17	0	1	7	0	0	3

	Cases
No disease	38
History of past illness not recorded in chart	59

Total number of patients with past venereal infection, 88 (gonorrhea, 62 cases; chancroid, 35 cases; bubo, 6 cases; chancroidal bubo, 11 cases; syphilis, 25 cases)
There was a past history of venereal disease for 126 patients (185 cases)

* The Kahn or Wassermann reaction of the blood was positive in 25 patients with bubo, 35 with chancroidal bubo and 7 with chancroid. All these patients had a past history of syphilis; none had active or primary syphilis as evidenced by the fact that repeated dark field examinations gave negative results.

blood showed slight anemia and a slight increase in the white cell count. The differential count was normal. The balanoposthitis subsided in a few days.

A 28 F McCarthy panendoscope was passed without difficulty. No pathologic changes were noted in the bladder. The entire posterior portion of the urethra was moderately injected. A dull, reddened, grayish membrane about twice the size of the verumontanum was observed just anterior to it and extending to the lateral walls. It was adherent and bled easily on probing. No other pathologic changes were seen on withdrawal of the endoscope.

The superficial and the deep inguinal lymphadenitis became fluctuant two weeks after the appearance of the bubo. Two areas were aspirated, sterile precautions being used, and from the 50 cc. of pus obtained a Frei antigen was prepared. The antigen provoked positive reactions in other patients. The Frei reaction, which had been negative for twenty days after exposure, became positive twenty-seven days after exposure.

The treatment consisted of repeated irrigations of the bubo with glycerin and of deep instillations of the same drug into the urethra. Repeated examinations revealed no involvement of the rectum. It seemed that the lymphatic drainage from the posterior portion of the urethra sought the less frequently observed direction toward the inguinal nodes instead of that toward the iliac nodes, thereby preventing a classic and unfortunate sequela, rectal stricture.

On April 29, 1933, examination with the endoscope revealed a healed and practically normal urethra. On May 1, 1933, the patient was discharged from the hospital. There was a slight serous discharge from one of the openings through which aspiration was done; this discharge ceased in a week.

Tables 2 and 3 show that the primary lesion occurs three times more frequently on the prepuce than in any other location. It appears that circumcision is a valuable measure for prophylaxis.

In 40 cases the buboes occurred before the appearance of the primary lesion. Two examples are herewith cited. In 1 patient adenitis appeared on the right side twenty-five days after contact with a Chinese woman. The Frei test became positive on the ninth day. Two open lesions appeared thirteen days after the enlargement of the right inguinal glands. Both lesions were of the ulcerative type. One was located to the left on the middle of the shaft of the penis and the other was near the middle of the root of the penis. The other patient stated that he was infected by a Japanese woman. A month later adenitis appeared on the left side and four days after the appearance of the bubo an ulcerative open lesion appeared in the right sulcus. One day after this open lesion appeared adenitis developed on the right side. The adenitis on the left side became fluctuant ten days after exposure, and that on the right side, five days after that on the left. The Frei test, which was at first negative, became positive on the sixth day. The antigens prepared from pus from these patients repeatedly produced positive reactions in patients known to have lymphogranuloma venereum. The first patient was in the hospital for thirty-three days and was sick for forty-three days; the second was in the hospital for ninety-three days and

TABLE 2.—*Chancroidal Bubo* *

	Number of Cases	Source of Infection				Frei Reaction		Kahn Reaction Positive
		Filipino	Chinese	Russian	Japanese	Positive	Negative	
Unclassified chancroidal bubo...	264	1	1	0	0	0	0	4
Right chancroidal bubo.....	143	11	7	2	0	5	6	13
Left chancroidal bubo.....	160	13	7	0	0	3	3	10
Bilateral chancroidal bubo.....	102	5	3	0	2	5	5	11
Total.....	569	30	18	2	2	13	14	40

	Number of Days in Hospital			
	Total	Average	Minimum	Maximum
Unclassified chancroidal bubo.....	6,769	48.7	11	115
Right chancroidal bubo.....	5,643	39.4	4	250
Left chancroidal bubo.....	6,187	38.6	8	163
Bilateral chancroidal bubo.....	4,262	41.8	3	120
Total.....	24,079	42.1	3	250

	Number of Cases	Total Number of Days of Illness, from Day of Appearance of Illness to Complete Recovery			
		Total	Average	Minimum	Maximum
Right chancroid.....	89	4,365	49.0	1	210
Right bubo.....	58	3,176	53.0	15	117
Left chancroid.....	103	5,638	54.6	3	181
Left bubo.....	81	4,918	61.2	12	150
Bilateral chancroid.....	66	3,783	57.5	3	206
Bilateral bubo.....	49	3,458	69.5	22	160
Unclassified chancroid.....	13	503	39.0	2	105
Unclassified bubo.....	13	718	55.0	17	130
Total: Chancroid.....	271	14,289	50.0	1	210
Bubo.....	201	12,270	59.5	12	160

	Number of Cases	Number of Days of Illness (Period of Observation†)			
		Total	Average	Minimum	Maximum
Right chancroid.....	35	1,923	55.0	3	365
Right bubo.....	79	3,634	46.0	7	365
Left chancroid.....	32	1,121	34.3	12	86
Left bubo.....	58	2,227	38.1	9	113
Bilateral chancroid.....	16	649	40.4	12	92
Bilateral bubo.....	47	2,193	46.6	12	180
Unclassified chancroid.....	6	197	33.0	12	49
Unclassified bubo.....	9	406	45.1	12	83
Total: Chancroid.....	89	3,890	40.7	3	365
Bubo.....	194	8,460	43.7	7	365

	Temperature				Number of Days		
	No. of Cases	Average	Maximum	Minimum	Average	Maximum	Minimum
Right chancroidal bubo.....	80	100.6	104.0	99.0	13.0	100	1
Left chancroidal bubo.....	92	101.0	106.0	99.0	10.7	60	1
Bilateral chancroidal bubo.....	64	100.4	105.0	99.0	12.0	40	1
Unclassified chancroidal bubo.....	10	100.5	103.0	99.0	5.0	10	2
Total.....	246	100.6	106.0	99.0	10.2	100	1

* All the patients who had a positive Kahn or Wassermann reaction of the blood had had previous syphilitic infections. The positive results of dark field examination and new syphilitic infections were not listed in these cases. In the cases of right chancroidal bubo 7 buboes occurred before the chancroid; in those of left chancroidal bubo, 6; in those of bilateral chancroidal bubo 27 buboes occurred before the chancroid, and 10 occurred first on the right and 8 first on the left side.

† In this group the past history was unknown; the patients returned to duty while the wound was draining, were transferred, returned to the United States or for other reasons could not be followed.

TABLE 2.—*Chancroidal Bubo *—Continued*

	Number of Cases	Incubation Period (Days)		
		Average	Minimum	Maximum
Right chancroid	62	8.6	1	55
Right bubo	50	19.2	1	132
Left chancroid	70	9.2	1	60
Left bubo	63	17.1	1	94
Bilateral chancroid	49	13.0	1	67
Bilateral bubo	39	14.4	1	96
Unclassified chancroid	7	10.2	1	26
Unclassified bubo	7	9.6	1	35
Total: Chancroid	188	10.2	1	67
Bubo	159	16.9	1	132

	No. of Buboes Incised	No. of Buboes Reincised	Number of Days from Appearance of Bubo to Day of Incision			
			No. of Cases	Average	Minimum	Maximum
Right bubo	105	6	36	15.1	4	46
Left bubo	115	4	33	21.0	4	69
Bilateral bubo	73	5	19	17.0	3	47
Unclassified bubo	17	0	5	23.0	7	58
Total	310	15	93	19.0	4	69

	Number of Cases	White Blood Cell Count‡		
		Average	Highest	Lowest
Right chancroidal bubo	92	12,800	23,000	8,000
Left chancroidal bubo	80	14,000	14,000	7,200
Bilateral chancroidal bubo	60	15,000	25,000	7,500
Total	232	13,900	25,000	7,200

Location of the Primary Lesion§

	No. of Cases		No. of Cases		No. of Cases
Prepuce	148	Sulcus, prepuce	5	Meatus, glans, prepuce	1
Sulcus penis	46	Sulcus, frenulum	3	Thigh	2
Frenulum penis	48	Glans, prepuce	2	Scrotum	4
Glans penis	29	Glans, frenulum	3	Leg	1
Frenulum, prepuce	9	Meatus	4		

‡ The differential blood count showed a slight monocytosis, otherwise it remained well within normal limits. There was a slight anemia, as manifested by the hemoglobin content and the red blood cell count.

§ Twenty-nine patients had a proved gonorrheal discharge from the urethra; 12 had an undetermined urethral discharge. There was one Filipino patient in this group.

was sick for one hundred and nineteen days. In the first patient complete healing of the open lesions occurred in sixteen days, and in the second patient it occurred in seven days. Only dressings with physiologic solution of sodium chloride were used as treatment.

The incubation period of the lymphadenitis in this series is apparently the same as that estimated by other observers. That for the bubo averaged twenty-eight days and that for the chancroidal bubo, fifteen days, which makes a total average of twenty-one days. The longest period of incubation was one hundred and eighty days, and the shortest, one day. In both the patients the Frei reaction was positive.

Table 4 shows that the bubo appeared with about the same frequency on the two sides, involvement of the left side being slightly

more frequent than that of the right. As compared with the bilateral type, the unilateral bubo occurred in the ratio 4:1. Wilmoth [8] stated that in 19 per cent of the patients the involvement was bilateral and that in 15 per cent it was limited to the right and in 66 per cent to the left side. Hellerström stated that the involvement was bilateral in

TABLE 3.—*Observation on Chancroid and on Gonococcic Infection of the Lymph Node*

	Total	Average	Maximum	Minimum
Hospital days	6,698	35.2	203	3
Total number of days	11,763	61.9	444	5
Incubation period	105 cases	7.1	60	1
Number of days fever (102 to 99 F.) was present	34 cases	5.3	21	1

Location of the Lesion on the Penis

Prepuce	66	Meatus, prepuce	1	Shaft, glans	4
Frenulum	18	Sulcus, prepuce	6	Meatus, glans	1
Glans	19	Glans, prepuce	3	Shaft, prepuce	2
Sulcus	19	Glans, frenulum	1	Scrotum	4
Shaft	10	Shaft, frenulum	2	Thigh	2
Frenulum, prepuce	9				

Complications with Chancroid

	Number of Cases
Proved gonorrheal urethral discharge	14
Unproved urethral discharge	5
Phimosis	26
Multiple chancroids	49

Gonococcic Infection of the Lymph Nodes †

Involvement	Number of Cases	Number of Days of Illness	
Right inguinal	9	Average (87 cases)	17
Left inguinal	17	Average plus ‡	54.7
Bilateral	12	Maximum	210
Unclassified	7	Minimum	15
Total	45		

* There were 190 cases of so-called chancroid; in none of these was the diagnosis based on observation of Ducrey's bacillus; in all repeated dark field examinations gave negative results. The Kahn or the Wassermann reaction of the blood was negative. All suspicious cases are not recorded here. There were 4 cases in which the Frei reaction was positive, however; in 1 there was a history of a previous bubo, in 1, of a previous chancroid and gonorrhea and in the remaining 2, of gonorrhea.

The sources of the infection were as follows: Chinese, 11; Filipino, 10; Russian, 1 and white, 1. In the other cases no information as to the source of infection was given.

† In 41 cases the node was incised; in 4 cases it was not incised. No smears were made of pus to establish the diagnosis. In 18 cases a urethral smear showed intercellular diplococci; in 26 no organisms were found in the smear.

‡ Some of the patients returned to duty while they were receiving treatment; others gave a doubtful past history.

35 per cent of the patients. In 363 patients with nonvenereal bubo the incidence of involvement was as follows: bilateral, 21 per cent; left side, 41 per cent, and right side, 38 per cent.

An analysis of the total number of hospital days for the patients with nonvenereal bubo and for those with chancroidal bubo revealed

8. Wilmoth, C. L.: South. M. J. **21**:108 (Feb.) 1928.

TABLE 4.—*Nonvenereal Bubo*

	Number of Cases	Source of Infection					Positive Frei Reaction
		Filipino	Chinese	Russian	White	Japanese	
Unclassified bubo	170						
Right inguinal bubo	138	9	2	2	2	1	14
Left inguinal bubo	151	11	0	0	0	0	8
Bilateral inguinal bubo	74	5	4	1	0	1	4
Total	533	25	6	3	2	2	26

	Number of Days in Hospital			
	Total	Average	Minimum	Maximum
Unclassified bubo	7,067	44.0	7	105
Right inguinal bubo	6,566	47.5	5	263
Left inguinal bubo	6,332	40.6	6	145
Bilateral inguinal bubo	3,057	41.3	2	221
	22,024	43.3	2	263

	Number of Cases	Total Days of Illness from Onset to Complete Cure			
		Total	Average	Minimum	Maximum
Right bubo	71	5,126	72.2	14	272
Left bubo	62	4,286	69.1	6	221
Bilateral bubo	36	2,651	76.7	11	370
Total	169	12,063	72.7	6	370

	Number of Cases	Days of Illness Plus*	
		Total	Average
Unclassified bubo	157	7,056	44.6
Right bubo	66	3,557	53.9
Left bubo	86	4,135	48.0
Bilateral bubo	37	1,752	47.4
Total	304	17,571	48.5

	Number of Buboes Incised	Number of Buboes Reincised	Number of Days from Appearance of Bubo to Day of Incision				
			No. of Cases	Total	Average	Minimum	Maximum
Right bubo	96	11	25	587	23.5	4	100
Left bubo	110	18	34	628	18.5	3	50
Bilateral bubo	46	2	9	240	26.3	3	44
Total	269	31	68	1,455	22.8	3	100

	Number of Cases	Temperature			Number of Days		
		Average	Highest	Lowest	Average	Minimum	Maximum
Right bubo	86	100.6	104.0	99.0	21.4	1	211
Left bubo	104	100.3	106.1	98.8	14.2	1	80
Bilateral bubo	40	100.2	104.2	99.2	12.0	2	60
Total	230	100.3	106.1	98.8	15.5	1	211

	Number of Cases	Incubation Period (Days) from Day of Exposure to Day of Appearance of Bubo		
		Average	Minimum	Maximum
Right bubo	18	30.3	5	120
Left bubo	14	57.5	3	180
Bilateral bubo	14	22.2	5	45
Total	46	28.3	13	180

	Number of Cases	Blood Count			Polymorphonuclears	Lymphocytes	Monocytes	Eosinophils	Differential Count†
		Average	Highest	Lowest					
Right bubo	85	12,520	16,200	6,450	70	23	5	2	Average
Left bubo	100	11,600	16,800	6,000	80	40	8	4	Highest
Bilateral bubo	25	12,000	14,800	8,000	55	10	2	0	Lowest

* In this group the past history was unknown, the patients returned to duty with the wound draining, were transferred, returned to the United States, or for other reasons could not be followed.

† Each differential count is average.

little difference. The period of hospitalization averaged about six weeks. The maximum number of days was two hundred and sixty-three and the minimum two.

The total number of days of illness from the onset of the infection to the day when the condition was completely healed averaged ten weeks for the patients with nonvenereal bubo; the shortest period was six days and the longest three hundred and seventy days. For patients with chancroidal bubo the period of illness averaged nine weeks, the maximum being thirty weeks and the minimum twelve days. The difference can be accounted for by the fact that more of the patients with nonvenereal bubo had lymphogranuloma venereum, which is a longer lasting illness. The difference of a week in the average total days of illness for patients with a penile lesion of the chancroidal bubo type as compared to those whose lesion was the chancroid can be explained by the fact that a primary lesion of lymphogranuloma venereum has a shorter duration than a real chancroid.

The number of the so-called nonvenereal buboes incised was 269, and of these, 31 were reincised. In reality the number was probably larger, because in many cases the treatment and the procedure were not recorded by the physician or his assistant. Of the 430 patients with chancroidal bubo, 310 were operated on. At any rate, about 75 per cent or more inguinal glands broke down, suppurated and were eventually opened. Seventy patients in the whole series underwent excision of a gland or glands. No complications were noted, and there was no reduction in the number of days of illness. The fact that no complications such as obstruction of lymph vessels due to excision occurred was contrary to the usual accepted opinion regarding excision of inguinal glands. Also the fact that there was no apparent reduction in the number of days of illness does not bear out the observation or the suggestion in the literature that excision is the best treatment. The partial removal and the excision of the superficial inguinal glands may explain the lack of complications such as elephantiasis; however, this does not account for the failure to reduce the number of days of illness. In four cases a second operation was performed to remove a few more of the infected glands. This did not make any difference in the recovery. The time from the onset to the day of incision in the cases of suppurating adenitis averaged about three weeks; the minimum number of days was three and the maximum number one hundred. Suppuration, therefore, to the point of fluctuation and incision usually takes three weeks.

The temperature varied between normal and 106 F. In the patients with bubo the average period of fever was fifteen and a half days; the longest was two hundred and eleven days and the shortest one day. The

lower average temperature in the patients with chancroidal bubo was due to the fact that a smaller number of patients in that group had lymphogranuloma venereum.

The white blood cell count averaged 12,000, and the differential count showed slight monocytosis but otherwise was well within normal limits. The red blood cell count and the hemoglobin content showed that slight

TABLE 5.—*Results of Frei Test on 648 Men from Destroyer Squadron 5*

	Number of Cases
Positive Reaction	
No venereal infection (denied by name, symptoms and signs)	2
Gonorrhea of the urethra	5
Syphilis	2
Chancroid	3
Nonvenereal bubo	5
Chancroidal bubo	2
Gonococcic infection of the lymph node	4
Repeated venereal infections each a year or more apart:	
Nonvenereal bubo, gonorrhea	6
Nonvenereal bubo, syphilis	2
Nonvenereal bubo, chancroid	5
Nonvenereal bubo, gonorrhea, chancroid	10
Nonvenereal bubo, chancroidal bubo	1
Nonvenereal bubo, gonorrhea, syphilis	4
Nonvenereal bubo, gonorrhea, syphilis, chancroidal bubo	2
Chancroidal bubo, chancroid, syphilis	5
Chancroidal bubo, gonorrhea, syphilis	4
Chancroidal bubo, gonorrhea	3
Chancroidal bubo, gonorrhea, chancroid	2
Gonorrhea, syphilis	4
Gonorrhea, chancroid	3
Gonorrhea, chancroid, syphilis	4
Syphilis, chancroid	1
Total nonvenereal bubo	35
Total chancroidal bubo	17
Total gonorrhea	44
Total syphilis	20
Negative Reaction	
No venereal infection (denied by name, symptoms and signs)	266
Gonorrhea of the urethra	129
Chancroid	50
Chancroidal bubo	9
Syphilis	70
Nonvenereal bubo	8
Gonorrhea, chancroid	35
Chancroidal bubo, chancroid, gonorrhea	2
Syphilis, gonorrhea	23
Syphilis, gonorrhea, chancroid	10
Gonococcic infection of the lymph node	3

anemia was present in most cases. The red cells never numbered less than 4,000,000, and the hemoglobin content was never lower than 80 per cent. The sedimentation rate of 15 patients in whom the Frei reaction was positive varied as follows: first determination, 15 mm. in the first half hour, 10 mm. in the second half hour and total 25 mm.; and second determination, 20 mm. in the first half hour, 6 mm. in the second half hour and total 26 mm.

All the patients who had a positive Kahn or Wassermann reaction of the blood had had syphilis. Positive results of dark field examination or primary syphilitic infections were not listed in the report of the cases.

No search was made for Ducrey's bacillus in any of the open lesions or in the so-called chancroids; therefore, the diagnosis of chancroid was never established.

Table 5 shows that lymphogranuloma venereum as determined by the Frei test occurred in 74, 9.2 per cent, of 684 men examined on a number of ships in the Orient. These patients were tested with one known Frei antigen and with a control antigen. All those exhibiting doubtful or mild reactions were tested again. The prevalence of mixed infections must be quite frequent, as about 2 per cent of the patients who had no history of bubo but had had gonorrhea or syphilis showed a positive reaction to the Frei reaction test. In 1 patient who had a positive reaction to the Frei test the last venereal infection had occurred twenty-one years earlier; this patient had the longest interval between the last infection and the positive Frei reaction.

TREATMENT

The treatment as recorded in the clinical charts consisted of a large variety of different procedures and drugs used by the various medical officers who had charge of these patients in the ten year period. Local applications of potassium permanganate, saline solution, boric acid, diluted solution of sodium hypochlorite, Moncier's solution (consisting of guaiacol, eucalyptol, peruvian balsam, iodoform, alcohol and ether), mercury bichloride, magnesium sulfate, copper sulfate, acriflavine, acetone, solution of methyl-rosaniline, compound solution of cresol, alcohol, liniment of soft soap, mercurochrome, iodine and other preparations were used as soaks, compresses, irrigations and the like at different intervals of time, in different concentrations and at different temperatures during the course of the disease. Silver nitrate, phenol and the actual cautery were used. Thymol iodide, iodoform, iodoform and glycerine, peruvian balsam, sulfonated bitumen, tincture of belladonna and other drugs were tried as solutions or as ointments in different combinations. Potassium iodide was administered orally. Calcium chloride, sodium iodide, antimony and potassium tartrate, arsphenamine, mercurochrome and compound solution of iodine were given intravenously in different concentrations, at different intervals of time and at different stages of the disease. Ultraviolet, infra-red and roentgen irradiation, diathermy and local application of heat by various technics were tried. Aspirations, incisions and partial excision of lymph glands were carried out. Fever therapy by means of injection of typhoid vaccine or intramuscular injection of boiled milk was unsuccessful. In a few cases I used intramuscular injections of whole blood obtained

from a cured patient with lymphogranuloma venereum; and in some cases this blood was injected around the infected glands without apparent success. All these procedures brought about no real change in the usual course of the disease. The suggestions given in *The Journal of the American Medical Association*[9] for the use of sodium antimony biscate chol-di-sulfonate was tried in the United States Naval Hospital, Mare Island, Calif., on a number of patients, but no particular improvement resulted. There were times when certain procedures seemed better than others, yet when they were used on a large number of patients the results were about as good as with local applications of physiologic solution of sodium chloride. It appeared as if the patient's resistance and the building up of immunity played the important part in the apparent early recovery. It therefore seems that stimulation of immunity is the rational approach to the problem of treatment.

Thomas and McCarthy[10] used a bouillon filtrate prepared after the method of Besredka as a local pack. They claimed that improvement resulted from that treatment. Tamura's[11] preparation of a culture for subcutaneous use seems an excellent approach for a specific therapy. The use of Frei antigen intravenously, as suggested by Gay-Prieto[12] and Hellerström, or of some prepared antiserum concentrated after the method of Felton may lead eventually to the solution of this perplexing problem. Gilje[13] used the Frei antigen in graded doses intracutaneously and claimed to have obtained good results. I also tried this type of treatment on 10 patients, using a newly prepared Frei antigen when it was available, as the more potent or reactive the antigen the better the response evidenced by involution of the involved glands. Graded doses were used, starting with 0.1 cc. and increasing the dose every other day according to the reaction, until the 0.7 cc. dose was reached. This seemed about the maximum dose that could be injected intracutaneously. In 7 of these patients suppuration or fluctuation never appeared about the inguinal glands and complete recovery occurred in from three to six weeks, or at an average in four weeks. The men all remained on duty, carrying out their normal activity without interfering symptoms. The period of illness was six weeks less than the average period for the 553 patients with nonvenereal bubo. Two patients were seen when suppuration in the inguinal region was present

9. Granuloma Inguinale and Lymphogranuloma Inguinale, Queries and Minor Notes, J. A. M. A. **102**:560 (Feb. 17) 1934.

10. Thomas, T. A., and McCarthy, Earl R.: Treatment of Lymphogranuloma Inguinale with Bouillon Filtrate, J. A. M. A. **102**:766 (March 10) 1934.

11. Tamura, J. T.: Cultivation of Virus of Lymphogranuloma Inguinale and Its Use in Therapeutic Inoculation: Preliminary Report, J. A. M. A. **103**:408 (Aug. 11) 1934.

12. Gay-Prieto, J.: Dermat. Wchnschr. **95**:1056 (July 16) 1932.

13. Gilje, L. E.: U. S. Nav. M. Bull. **34**:1 (Jan.) 1936.

and open drainage became spontaneous. These responded readily to the antigen, a continued cessation of drainage appearing after the second or third injection and complete recovery after the twelfth injection. The last four injections were given at a week's interval.

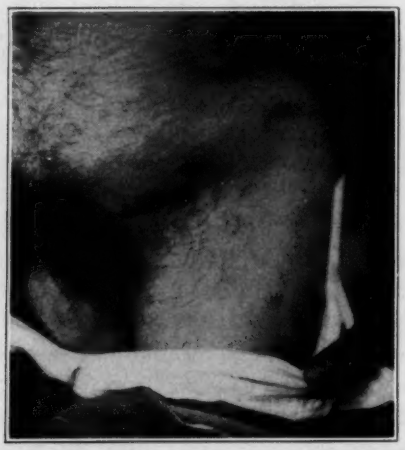

Fig. 1.—Healing lesions after four injections of antigen.

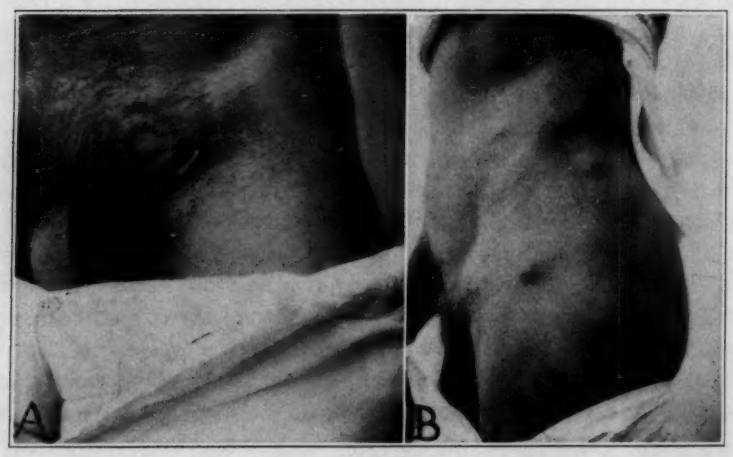

Fig. 2.—*A*, open draining adenitis; *B*, results after three injections of antigen.

Figure 1 shows the results in 1 patient after the fourth injection. He recovered completely in four weeks.

Figure 2 *A* shows the open draining adenitis which was of a mild serous nature; the appearance after the third injection of Frei antigen is shown in figure 2 *B*. This patient's lesion was practically healed in the

sixth week. The final picture could not be taken because the patient was transferred. No treatment other than dry dressings was used on the two draining lesions, and from the pus on these dressings soaked in physiologic solution of sodium chloride antigen was prepared.

The response of these few patients seems to justify further use of this method of treatment in order that the result in a larger number of patients may be determined.

SUMMARY

Venereal diseases such as gonorrhea, gonococcic infection of the lymph nodes, chancroid, chancroidal bubo and the so-called nonvenereal bubo are probably frequently combined with lymphogranuloma venereum and may frequently be incorrectly diagnosed.

The venereal diseases do not have a monthly, seasonal or yearly change. They occur in all races in the Far East with equal frequency, and apparently the course of the disease is the same in all races.

It was found that the Frei reaction usually becomes positive after the appearance of the adenitis, in twenty-one days; however, in 1 case it remained negative for six months and then became positive.

The Frei reaction probably remains positive throughout the patient's life.

The period of incubation before appearance of the primary lesion averaged twelve days; it varied between one and sixty-seven days after exposure to the source of infection.

The primary lesion occurred most frequently on the prepuce.

The occurrence of a primary lesion in the posterior portion of the urethra is described in a report of a case.

The period of incubation of the lymphadenitis was, on the average, twenty-one days; it varied between one and one hundred and eighty days.

The inguinal adenitis appeared before a definite lesion in about 5 per cent of the cases.

The lymphadenitis was bilateral in 21 per cent of the cases; it was limited to the left inguinal region in 41 and to the right inguinal region in 38 per cent of the cases.

The period of hospitalization for patients with inguinal venereal infections averaged six weeks, the maximum period being two hundred and sixty-three days and the minimum period two days.

The total number of days of illness from the onset of the infection to complete cure averaged from nine to ten weeks; one patient was ill for over a year.

The inguinal adenitis became fluctuant in about three weeks; in 75 per cent of 805 cases the glands were incised, and in 12 per cent they were reincised.

The temperature varied between normal and 106 F. and averaged about 100 F.

The studies of the blood revealed slight anemia and a slight monocytosis.

Seventy-four of 684 patients had a positive reaction to the Frei test; all but 2 of these had a past history of venereal infection. About 60 per cent of the patients who had a negative reaction to the Frei test had a venereal infection.

The fact that many different forms of treatment have been used in the past suggests that these treatments were unsuccessful. Active or passive immunization seems to be the rational, and probably is the specific, treatment for lymphogranuloma venereum.

The intracutaneous administration of graded doses of potent Frei antigen every other day until at least eight doses or more are injected near the site of the lymphadenitis seems to bring about a rapid involution of the induration and in cases of suppuration to hasten the absorption or the cessation of open drainage. The results with this type of treatment suggest that it be subjected to further trial or improvement because the other forms of treatment have not been successful.

Gonococcic infection of the lymph nodes appears to be an extremely rare disease and is frequently not properly diagnosed.

INFLUENCE OF AVITAMINOSIS A ON EXPERIMENTALLY PRODUCED CUTANEOUS INFECTIONS IN RATS

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The question of an increased susceptibility of the skin to infection in avitaminosis A has been the subject of much discussion. Frazier and Hu [1] noted that pyogenic dermatosis occurred frequently as a late phenomenon in patients suffering from this deficiency. McCoy [2] in studying vitamin A deficiency in young albino rats found that animals with this disorder exhibited a definitely lowered resistance to Trichinella spiralis administered orally. Furthermore, in the rats with vitamin A deficiency any immunity to a second inoculation failed to develop, whereas controls were rendered completely immune by one inoculation. Workman,[3] Green and Mellanby,[4] Boynton and Bradford [5] and others have also noted that in rats with vitamin A deficiency there was a general lack of resistance to experimental infections in various body structures other than the skin. MacKay [6] in a large clinical study attempted to determine the effect of prophylactic treatment with vitamin A. One group of infants and children studied was partially deficient in vitamin A while the other group received a diet to which an

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From the Department of Physiological Chemistry, D. Wright Wilson, Ph.D., Director, and the Department of Dermatology and Syphilology, John H. Stokes, M.D., Director, University of Pennsylvania School of Medicine.

1. Frazier, C. N., and Hu, C.: Cutaneous Lesions Associated with a Deficiency in Vitamin A in Man, Arch. Int. Med. **48**:507 (Sept.) 1931.

2. McCoy, O. R.: Effect of Vitamin A Deficiency of Rats on Resistance to Infection with Trichinella Spiralis, Am. J. Hyg. **20**:169 (July) 1934.

3. Workman, C. H.: Immunologic Significance of Vitamins: Influence of the Lack of Vitamins on Resistance of Rat, Rabbit and Pigeon to Bacterial Infection, J. Infect. Dis. **32**:255, 1923.

4. Green, H. N., and Mellanby, E.: Vitamin A as an Anti-Infective Agent, Brit. M. J. **2**:691, 1928.

5. Boynton, L. C., and Bradford, W. L.: Effect of Vitamins A and D on Resistance to Infection, J. Nutrition **4**:323, 1931.

6. MacKay, H. M. M.: Vitamin A Deficiency in Children: Vitamin A Requirement of Babies; Skin Lesions and Vitamin A Deficiency, Arch. Dis. Childhood **9**:133 (June) 1934.

adequate amount of this substance was added. The results of this study indicated a definite increase in resistance of the skin to minor infections in the group given vitamin A. The incidence of minor cutaneous irritations such as napkin erythema and of cutaneous infections such as intertrigo, boils and whitlow was 27 per cent in this group as compared to 52 per cent in the group with vitamin A deficiency. MacKay concluded that a slight vitamin A deficiency diminishes the resistance of the skin to infection.

Loewenthal,[7] on the other hand, was impressed by the infrequent occurrence of pyogenic cutaneous infections in patients with vitamin A deficiency, particularly in those who bathed often. Sweet and K'ang[8] in a series of 203 cases of avitaminosis A in Chinese patients found infection of the skin to be rare. Impetigo and cutaneous ulcers were seen in less than 5 per cent of the cases, an incidence considered by the authors to be low in view of the economic state and the poor hygienic environment of the patients. Furthermore, Sweet and K'ang expressed the belief that excess vitamin A in the diet exercises no protective action against infection of the skin. Wright and his co-workers[9] and Hess[10] have submitted evidence tending to refute the conception that a deficiency of vitamin A in the diet predisposes to acute infections of the respiratory tract.

A papular dermatosis attributed to vitamin A deficiency by Loewenthal, Frazier and Hu, Sweet and K'ang and others has not been discussed, as it does not seem to bear any relation to infection per se.

A complete summary of the literature on this subject has not been attempted, but, as has been pointed out by Clausen,[11] purely experimental evidence concerning the relation of avitaminosis A to cutaneous infection is lacking.

MATERIALS AND METHODS

Animals.—Because of the ease with which vitamin A deficiency may be produced in these animals, young albino rats from a laboratory stock were selected. It is well known that the skin of rats is resistant to infection, but it was believed that any marked difference in susceptibility encountered would be significant. The mothers of these rats were fed the Steenbock[12] stock diet to which 2 per cent yeast was added.

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7. Loewenthal, L. J. A.: A New Cutaneous Manifestation in the Syndrome of Vitamin A Deficiency, Arch. Dermat. & Syph. **28**:700 (Nov.) 1933.

8. Sweet, L. K., and K'ang, H. J.: Clinical and Anatomic Study of Avitaminosis A Among the Chinese, Am. J. Dis. Child. **50**:699 (Sept.) 1935.

9. Wright, H. P.; Frost, J. B.; Puchel, F., and Lawrence, M. R.: Vitamin A and the Common Cold, Canad. M. A. J. **25**:65, 1931.

10. Hess, A. F.: Diet, Nutrition and Infection, New England J. Med. **207**: 637, 1932.

11. Clausen, S. W.: Influence of Nutrition upon Resistance to Infection, Physiol. Rev. **14**:309 (July) 1934.

12. Steenbock, H.: Satisfactory Ration for Stock Rats, Science **58**:449, 1923.

Diet.—The basal vitamin A-deficient diet consisted of the following ingredients:

Casein (alcohol extracted)	18 per cent
Agar	2 per cent
Salt 40[13]	4 per cent
Yeast	6 per cent
Dextrinized starch	70 per cent
Viosterol, 3 drops per kilogram of diet.[14]	

The control animals were given 0.2 cc. of cod liver oil three times a week in addition to the aforementioned diet. The rats on the diet lacking vitamin A continued to gain weight for from four to six weeks, at which time a peak was reached. Loss of weight and xerophthalmia then appeared.

Technic.—The same strains of staphylococci and streptococci were used throughout the experiment. These organisms when injected intradermally in dogs and in rabbits caused ulcerative necrotic infections. All the rats were infected by the following technic: After the abdomen was shaved 0.5 cc. of a twenty-four hour broth culture of both the streptococci and the staphylococci was injected intracutaneously. The abdomen was then scratched in two places, and a drop of each culture was rubbed into the excoriated area. The severity and duration of the resulting infections were then observed.

RESULTS

The results are given in the table.

Observations on Vitamin A-Deficient and on Normal Rats

Group A Vitamin A-Deficient Rats		Group B Normal Rats	
Rat	Severity of Infection*	Rat	Severity of Infection*
1	Moderate	3	Moderate
2	Minimal	4	Minimal
5	Moderate	10	Minimal
6	None	11	Minimal
7	None	12	None
8	Minimal	13	Minimal
9	Minimal	14	Minimal
15	Minimal	18	Minimal
16	Minimal	19	Minimal
17	Minimal	20	Moderate

* "Minimal" designates a 0.5 to 1 cm. inflammatory reaction with a pustular crust and superficial ulceration or an inflammatory nodule 0.5 cm. in diameter. "Moderate" designates deeper ulcerative lesions or inflammatory nodules 1 cm. or more in diameter.

Group A was composed of rats which showed definite signs of vitamin A deficiency (loss of weight and xerophthalmia) at the time of inoculation. Of the ten rats in this group, eight showed definite evidence of infection of the skin in the form of superficial pustular crusting and ulceration or, in the case of animals inoculated intra-

13. The composition of salt 40 is explained in the following articles: Steenbock, H., and Nelson, E. M.: Fat Soluble Vitamine: Light in Its Relation to Ophthalmia and Growth, J. Biol. Chem. **56**:355, 1923. Steenbock, H., and Gross, E. G.: Fat-Soluble Vitamine, ibid. **40**:501, 1919.

14. The viosterol used contained 1,000,000 U. S. P. XI units of vitamin per gram. It was furnished by Mead Johnson & Co.

dermally, pea-sized inflammatory nodules, which occasionally broke down and discharged pus. Nine of the ten rats in the control group (group B) showed signs of infection similar to those seen in animals of group A. The grade of infection for animals in both groups as a whole was minimal. It is noted that of the five more severe infections three occurred in rats in group B and two in rats in group A. The duration of infection was from five to ten days, depending on the severity of the reaction. Several of the rats in group A showed rapidly healing infections at the sites of inoculation while dying of vitamin A deficiency. The animals were equally resistant to both the streptococci and the staphylococci used. No reaction resulted from scratch or intracutaneous inoculation of sterile broth.

Thus a critical comparison of the response of the rats in these two groups to experimental inoculation of the skin with pathogenic organisms failed to reveal any differences worthy of note.

CONCLUSION

Avitaminosis A in rats has no apparent effect on the resistance of the skin to experimentally produced infection with streptococci and staphylococci.

Dr. J. H. Jones supplied the rats used in these experiments.

ACNEFORM DERMATOSIS PRODUCED BY ORTHO (2 CHLOROPHENYL) PHENOL SODIUM AND TETRA-CHLORPHENOL SODIUM

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The condition to be described resembles none described in the literature except the "chlor-acne" described by Prosser White. A preliminary report is made because of the fact that recently the use of the drugs under consideration was recommended for treatment of fungous infections in man.

Twenty-one cases have been observed. In seventeen the disorder was severe enough to require treatment. The patients treated were all young white men. Most of them were aged from 19 to 23; one was 34.

The chemicals which I later found to be causative were used in a mixture. The first acne-like eruption appeared one month after the products were manufactured in a powder form. All the men exhibiting the condition were employed in sacking the mixture. The disorder here described developed within the next six months after contact with the chemicals.

I have seen four laboratory workers who had a milder, more localized reaction after working with dichlorinated phenyl. Their reaction closely resembled the disorder described by Jack Jones, of Atlanta, Ga.

In the cases which form the basis of this report the essential lesions were predominantly papulofollicular and were associated with marked hyperkeratosis. Enormous numbers of comedones and numerous sebaceous cysts were present. In some cases comedones were so numerous as to produce a black discoloration. Secondary pustular lesions from the size of a pea to that of a chestnut were observed. The eruption began with a few papules behind the ears; then it spread to the forehead, cheeks, chin and back of the neck. The scalp was not involved. Involvement of the shoulders, presternal region, upper portion of the arms and buttocks was seen in five cases. Two patients who had acne of the face previously showed in addition involvement of the abdomen, penis, scrotum, anterior surfaces of the thighs and flexor surfaces of the forearms. The hands or feet were not affected.

In one case the early stage of the disorder was diagnosed as dermatitis papillaris capillitii both by me and by a reputable dermatologist who saw the patient independently. At that time we did not suspect an industrial causation.

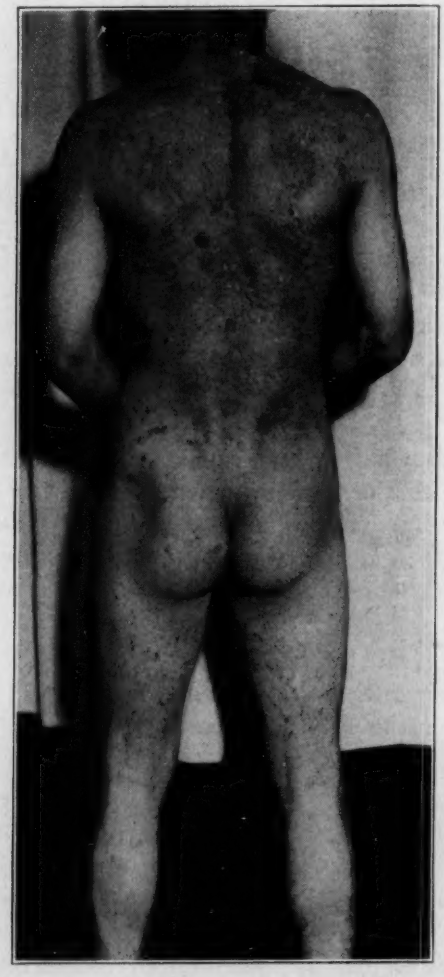

Fig. 1.—Full length view showing the widespread involvement. Anteriorly, the face, presternal areas, abdominal wall and penis showed similar scars but fewer active lesions.

The twenty-one patients were removed from the plant concerned to other work more than fifteen months ago, but none has completely recovered. The process, especially in those treated with roentgen rays, is less active, but some papules and comedones persist. Severe scarring

of the pitted variety seen in ordinary acne is common. Several patients have recurrent crops of new lesions at varying intervals. In a few patients who had no lesions when removed from the source of contact a severe reaction developed as late as from three to five months after

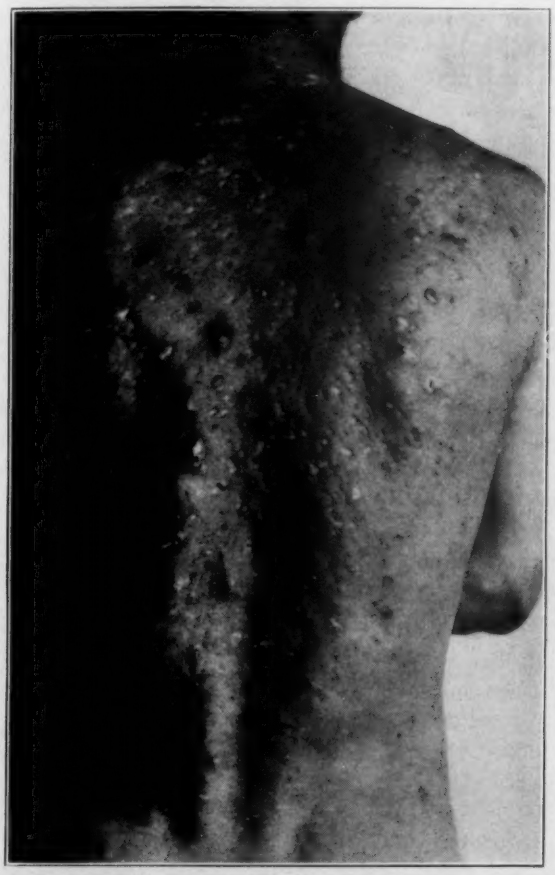

Fig. 2.—Photograph made eighteen months after the beginning of the dermatosis. This youth, aged 19, had not worked with the chemicals concerned during the past fifteen months. He had been treated with the usual "acne lotions," fractional roentgen radiation, saline solution and sodium thiosulfate. Roentgen treatment proved most effective, but besides the numerous scars, comedones, papules and pustules remained. The face and anterior portions of the body showed similar scars but only a few active lesions.

exposure. A number of these men have lost weight and complain of being easily fatigued.

Laboratory tests for possible impurities in the products gave negative results. Examination of the urine for bromides and iodides revealed

none. Patch tests with the mixture produced an immediate caustic action owing to the excess of sodium hydroxide present, but this was not a specific reaction. Patch tests with the pure chemicals, i. e., ortho (2 chlorophenyl) phenol sodium and tetra-chlorphenol sodium, produced a positive reaction to the former but not to the latter drug. This reaction was simply an irritation response and was not due to specific sensitivity, as evidenced by the fact that tests on controls produced the same reaction. The contact dermatitis produced did not resemble the acneform dermatosis and cleared up spontaneously within a few days. Biopsies were requested but refused.

SUMMARY

I have observed twenty-one cases of an acneform eruption resembling the tar acne or the "chlor-acne" described by Prosser White. These eruptions occurred in persons handling a mixture of ortho (2 chlorophenyl) phenol sodium and tetra-chlorphenol sodium. Only persons handling the finished products were affected. These men did not handle or come in contact with any by-products. Other men working in the same building but not coming into direct contact with the aforementioned agents remained unaffected. In some patients the disorder developed several months after exposure had ceased. No reactions occurred in persons who had not been exposed to the chemicals concerned. Patch tests failed to show any epidermal sensitization. Therapy proved helpful but not curative.

My observations in these cases indicate that ortho (2 chlorophenyl) phenol sodium and tetra-chlorphenol sodium are capable of producing severe acneform eruptions on the human skin. These drugs should not be used as fungicidal agents until further investigation reveals the mechanism whereby they produce this dermatosis. I should like to discover whether the reaction is purely cutaneous or whether there is damage to internal organs. I am of the opinion that a constitutional reaction is involved, and I hope that a solution may throw some light on the etiology of true acne. I hope that further observation and experimentation with animals will enable me to make a later report concerning this disorder.

ERUPTION RESEMBLING LICHEN SCROFULOSORUM COINCIDENT WITH NONTUBERCULOUS PULMONARY DISEASE

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Although lichen scrofulosorum is the oldest known tuberculous eruption, many phases of the clinical and pathologic conceptions of this disorder are still controversial. It is widely accepted that the cutaneous manifestation represents an expression of hematogenous dissemination of tubercle bacilli or their toxins during the so-called secondary stage described by Ranke.[1] In agreement with this point of view are the many observations indicating the preponderance of cutaneous lesions in children, who, as a class, are most prone to bacillemia or toxemia of this type (tuberculosis of the lymph nodes). The problems presented in the evaluation of the data culled from the literature may be classified conveniently, for the purposes of this report, into three categories: clinical picture, histologic picture and internal medical aspects.

1. Clinical Picture. The morphologic attributes of lichen scrofulosorum may be imitated closely by a host of dermatoses, and the differential diagnosis may in consequence present serious difficulties when based on clinical data alone. There are recorded in the literature many classic errors of this type made by renowned investigators (Jadassohn [2]), and it must be admitted freely that such errors were in large measure unavoidable in the light of the existing knowledge. Only occasionally does a frank polemic discussion find its way into print in such manner as to indicate clearly the essential divergences in opinion.[3]

2. Histologic Picture. According to Lewandowsky [4] and Volk,[5] among others, the pathologic changes observed in lichen scrofulosorum

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From the Dermatological Department of the Mount Sinai Hospital, service of Dr. Isadore Rosen.

1. Ranke, K. E.: Ausgewählte Schiften zur Tuberkulosepathologie, Berlin, Julius Springer, 1928.

2. Jadassohn, J.: Demonstration eines Falles von Lupus Erythematosus disseminatus (case of Tièche), Verhandl. d. deutsch. dermat. Gesellsch., 1906, p. 463.

3. Jacobi, E., in discussion on Wolf: Demonstration von drei Fällen von Lichen scrofulosorum, Verhandl. d. deutsch. dermat. Gesellsch., 1898, p. 486.

4. Lewandowsky, F.: Die Tuberkulose der Haut, Berlin, Julius Springer, 1916.

5. Volk, R., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1931, vol. 10, part 1, p. 331.

are constantly characteristic provided that sufficient biopsy material is available for study; these investigators regarded the histologic features as fairly specific and required their presence as a sine qua non for accurate classification of the dermatosis. Opposed to this group are the observers who have recorded the occurrence of simple nonspecific inflammatory reactions in cases of lichen strofulosorum (Klingmüller,[6] Nobl[7]); for the latter group, the clinical attributes of an eruption assume in consequence greater significance than the histologic observations. There are several difficulties that impede the satisfactory solution of the problem: (*a*) Clinical observation has shown that other disorders may simulate the morphologic attributes of lichen scrofulosorum so closely that one is forced to depend on the observation of characteristic histopathologic alterations as a precise means of differential diagnosis (Jadassohn[8]). (*b*) There are observers (Lewandowsky[4] and others) who have stated that in practically all instances of authentic lichen scrofulosorum characteristic (tuberculous or tuberculoid) changes are noted when the manifestations are studied adequately. (*c*) On the other hand, the histologic features of lichen scrofulosorum may be imitated closely by other dermatoses, for example, by lichen syphiliticus,

3. Internal Medical Aspects. The diagnosis of active tuberculosis may present many difficulties since there are numerous instances in which the disease appears to assume a chronic benign form. This applies not only to pulmonary tuberculosis but to the lymph node variety of the disease, the latter being particularly important in a consideration of lichen scrofulosorum. Clinical and roentgenologic studies may fail to reveal significant alterations because the methods used are not sufficiently sensitive or because the alterations cannot be detected by the various means of examination. Moreover, the patient may first come under observation at a time when the internal tuberculous process has apparently already undergone fairly complete resolution. A perusal of the data recorded in the literature reveals, however, that such difficulties are in reality more or less theoretical in most instances, patients with that stage of the disease usually manifesting unequivocal signs of tuberculous infection.

The interesting case reported here presented features illustrating the difficulties encountered in the classification of an eruption resembling lichen scrofulosorum. Although the diagnosis was freely accepted, critical analysis of the clinical and pathologic data disclosed definite discrepancies, and it is the principal purpose of this report to discuss,

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6. Klingmüller, V.: Beiträge zur Tuberkulose der Haut, Arch. f. Dermat. u. Syph. **69**:167, 1904.

7. Nobl, G.: Zur Pathogenese des Lichen skrofulosorum, Dermat. Ztschr. **16**:205, 1909.

8. Jadassohn, J.: Die Tuberculide, Arch. f. Dermat. u. Syph. **119**:10, 1914.

without any attempt to express a final opinion, some of the disturbing problems in diagnosis that arose during the period of observation. Analysis of this case provided interesting evidence confirmatory of the point of view recorded by Keil, who commented on an article by Montgomery,[9] in a recent communication in which data were presented indicating that the utmost circumspection was necessary before the precise diagnosis of lichen scrofulosorum could be accepted.

REPORT OF A CASE

S. G., a boy aged 9½ years, entered the Mount Sinai Hospital on Oct. 22, 1931, suffering principally from paroxysms of coughing productive of foul sputum. In September 1930 tonsillectomy had been performed. About three months after the operation the child complained of anorexia and fatigability and began to lose weight. The symptoms persisted during the succeeding six months. Apparently the child was febrile during that time; however, he had no night sweats or chills. On June 8, 1931, he was admitted to a sanatorium with a tentative diagnosis of pulmonary tuberculosis of adult type. A roentgenogram made at that time revealed a dense homogeneous shadow in the right lung, the outline of the shadow extending from the apex down to the third rib. Mantoux tests with doses up to 1 mg. of old tuberculin were negative. The sputum, although mucopurulent, revealed no tubercle bacilli on direct smear. Within the next few weeks the sputum took on a foul odor. A roentgenogram now revealed changes suggestive of pulmonary abscesses. Aspiration was performed high up in the right axilla, deep recesses of the abscess cavity being reached, and 10 cc. of exceedingly foul purulent material was obtained. A complete bacteriologic study of the pus failed to reveal any significant observations. Subsequently artificial pneumothorax was instituted, but this proved to be unsatisfactory because of the presence of a broad adhesion over the abscess. An effusion developed, and the boy became desperately ill; the temperature rose to 103 F., and there was pronounced respiratory and circulatory embarrassment. A small tube was inserted between the ribs to relieve the complicating interference with circulation; bacteriologic examination of some pleural fluid again gave negative results. A sinus developed at the point of puncture, and mucopurulent material drained through the aperture. In the next few days the sinus tract closed. Postural drainage was instituted, and moderate relief of symptoms resulted. On three occasions early in the period of observation, a yeastlike organism, pathogenic for white mice, was isolated from specimens of sputum. Subsequent search for this organism was unsuccessful although the character of the sputum remained more or less unchanged. Toward the end of September 1931 the boy was discharged from the sanatorium, but owing to the persistence of the productive cough and foul sputum he entered the Mount Sinai Hospital for further observation.

On admission to that hospital it was noted that the patient was expectorating large quantities of foul sputum. Inspection of the skin revealed no unusual changes except generalized dryness and a moderate degree of clubbing of the fingers and toes. Physical examination of the heart and abdomen revealed no

9. (*a*) Montgomery, D.: Coincidence of Lichen Scrofulosorum with Lupus Erythematosus, Arch. Dermat. & Syph. **31**:371 (March) 1935. (*b*) Keil, H.: Coincidence of Lichen Scrofulosorum with Lupus Erythematosus, ibid. **31**:872 (June) 1935. Montgomery, D.: Reply, ibid. **31**:873 (June) 1935.

abnormalities of importance. The clinical and roentgenologic findings showed an advanced pulmonary abscess communicating with a chronic empyema. Pirquet and Mantoux tests with 0.1 cc. of tuberculin in 1:1,000 dilution were negative. Examination of a specimen of sputum revealed the presence of numerous pus cells with many types of bacteria; elastic fibrils, Curschmann spirals, Charcot-Leyden crystals and tubercle bacilli were, however, not demonstrable. On Oct. 30, 1931, an operation was performed successfully; it disclosed a pulmonary process enveloped by densely thickened pleura and an encapsulated empyema communicating with a large bronchial fistula. It seemed likely that the alterations were those of a pulmonary abscess, probably secondary to tonsillectomy. The postoperative course was eminently satisfactory; the previous expectoration of enormous quantities of foul sputum ceased almost immediately. There was progressive improvement in the general condition, and the patient was discharged with a residual bronchial fistula. Several weeks later the boy was readmitted for the purpose of undergoing excision of scar tissue which had grown into the external orifice of the wound, resulting in interference with drainage. The patient was discharged on Jan. 10, 1932, with a satisfactory bronchial fistula and an open wound but no other symptoms.

He was seen again on May 26, 1932, with evidence of an undrained focus of suppuration in the upper lobe of the right lung. After several unsuccessful attempts the lesion was finally drained satisfactorily, marked improvement in the general condition resulting. The problem now became one of treating the residual bronchiectatic dilatations which involved practically the entire right lung. Accordingly, paravertebral thoracoplasty was performed in several stages. During this time a congo red test showed only 22 per cent retention of the dye in one hour, indicating that there was probably no amyloidosis. The patient was discharged on June 1, 1933, in excellent condition and free from symptoms. A roentgenogram still revealed the presence of numerous dilated cavities, which, it was felt, might require subsequent attention.

On June 10, 1933, the boy was observed in the surgical division of the outpatient department, where the wound was dressed from time to time and the drainage watched closely. From December 1933 until June 1934 filtered high voltage roentgen radiation was administered for the purpose of healing the bronchiectatic dilatations.

Cutaneous Examination.—On May 18, 1935, the patient was referred to the dermatologic department for consultation relative to a cutaneous eruption which, he stated, had appeared several weeks before. Inspection of the skin revealed a generalized dryness with a folliculopapular hyperkeratotic eruption scattered over the trunk and affecting particularly the inferior portion of the back. A few lesions were observed on the extensor aspects of the arms near the elbows. The individual efflorescences were for the most part from the size of a millet seed to that of a pinhead, skin colored and noninflammatory; only occasional elements revealed a faint erythematous halo. The hyperkeratosis was in some places sufficiently pronounced to imitate spinous processes; when the hand was passed over the affected areas it received a nutmeg grater-like feeling. The scalp disclosed no evidence of fungous infection; the toes were likewise uninvolved. The presence of an eruption on the trunk with definite evidence of grouping of lesions in a boy with pulmonary disease suggested to several observers the possibility of lichen scrofulosorum.

Subsequent Course.—In the next few months it was noted that the eruption would come and go. According to the patient it actually underwent complete

Fig. 1.—Photograph showing disseminated papules from the size of a pinhead to that of a millet seed partly in grouped arrangement.

Fig. 2.—Photograph showing papules from the size of a pinhead to that of a millet seed in coin-shaped grouping.

involution on one occasion. On Dec. 28, 1935, lesions analogous to those observed at the first examination were found over the entire trunk and on the arms; a prominent group of slightly inflammatory papules was observed on the posterior aspect of the shoulders.

Histologic Examination.—In the upper portion of the cutis and subpapillary layer, especially about a follicle, the vessels were moderately dilated and there

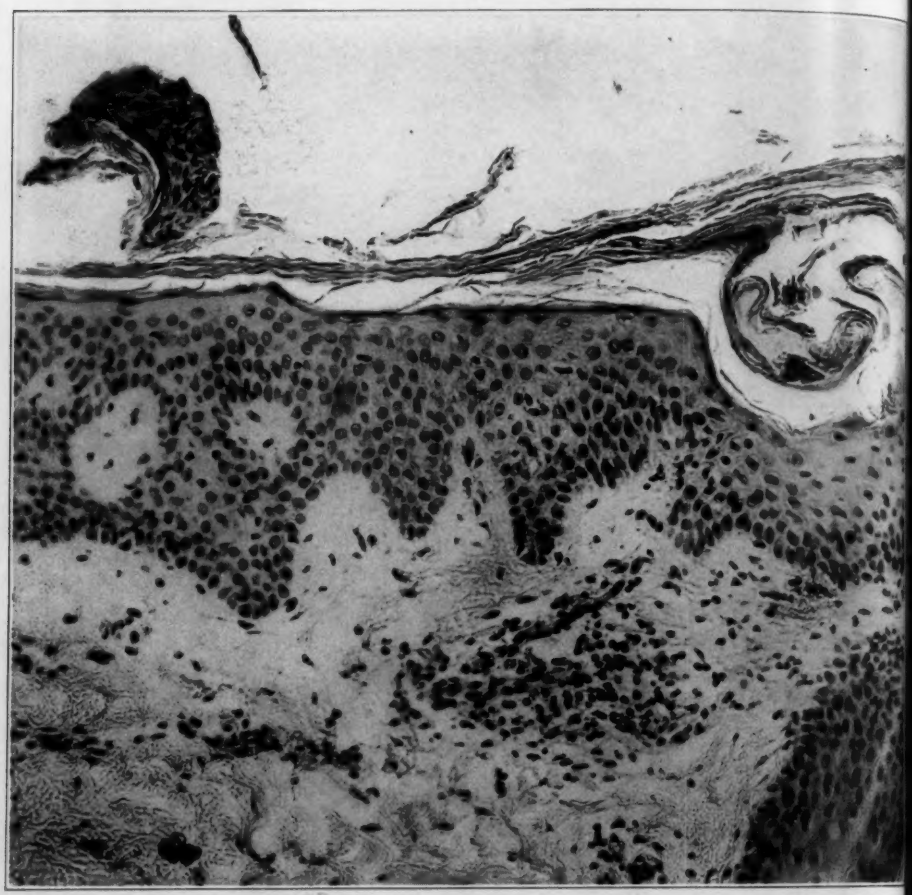

Fig. 3.—Medium magnification of section showing a follicular plug and superficial inflammatory process.

was a rather sparse, in part focal and in part diffuse, cellular infiltrate. Throughout the middle and upper parts of the cutis there was moderate interstitial edema.

The epidermis was slightly, if at all, acanthotic, except about the follicles. In one area the epidermis appeared to be thickened, but this was due to the sectioning; the specimen contained the cross-section of several papillary bodies. The follicle opening contained a fairly large plug composed of densely laminated horny material. The basal cell margin of the epidermis was intact throughout. There was

no intercellular edema, spongiosis or vesicle formation. The granular layer was present, and there was no parakeratosis. The cellular infiltrate was composed almost entirely of small round cells.

There was little reaction in the papillary bodies, and no tubercle or tubercle-like formation was observed. Lichen nitidus and lichen scrofulosorum could be ruled out. The process could well fit in with lichen pilaris or possibly lichen spinulosus.

The second biopsy showed a process similar to that observed in the first specimen except for the fact that the superficial exudative inflammatory process was much more marked. This pointed to lichen spinulosus rather than lichen pilaris.

COMMENT

This patient was presented twice before representative groups of dermatologists, and on each occasion the dermatosis he exhibited appeared to be accepted as an example of lichen scrofulosorum. This impression was based on the location of the eruption and on the grouping of lesions in several areas in a patient with pulmonary disease.[10] Had the dermatosis, however, been accepted as lichen scrofulosorum without closer scrutiny, the result would have been the presentation of an uncritical casuistic report with many conflicting features. These features will be discussed under the same three headings as those mentioned in the first part of the paper.

1. Clinical Picture. Although the histologic observations indicated a mild nonspecific inflammatory process, the lesions were for the most part noninflammatory clinically. Contrary to the usual appearance of individual lesions of lichen scrofulosorum, the efflorescences in this case were firm rather than soft and lacked clinical evidence of chronic inflammation, such as is generally encountered in the average example of the former disease in a white person. To be sure, there was grouping of lesions in isolated patches, but throughout the period of observation this feature hardly corresponded in extent to that encountered characteristically in the average instance of lichen scrofulosorum. Moreover, unlike the eruption in the latter disease, the few isolated plaques revealed no evidence of central involution, and there were no fresh additions of lesions on the periphery of isolated patches. On the other hand, the universal dryness of the skin, the presence of hyperkeratotic lesions on the extensor aspects of the elbows, the hyperkeratotic type of eruption situated on the trunk with its predilection for the shoulders and buttocks, and even the occasional grouping of elements into a plaque were con-

10. In discussing this case, Dr. Marion B. Sulzberger said: "I think that clinically this eruption resembles lichen scrofulosorum to a high degree. That diagnosis cannot be excluded on the ground of mere lack of positive signs of active tuberculosis. In other words, proved and active lichen scrofulosorum is not necessarily associated with active pulmonary tuberculosis" (Arch. Dermat. & Syph. **34**:1049 [Dec.] 1936).

sistent with the diagnosis of lichen pilaris seu spinulosus (Crocker).[11] On clinical grounds it seemed likely that the following dermatoses could be eliminated adequately, viz., lichen syphiliticus, lichen trichophyticus, lichen nitidus, pityriasis rubra pilaris, and the lichenoid lesions due to vitamin A deficiency.

2. Histologic Picture. Two specimens of skin showing various stages of development of the disorder were examined. The histologic picture was that of a mild inflammatory follicular process. Although the specimens were not cut serially, there were sufficient sections available to prevent the possibility of overlooking an area showing characteristic tuberculoid changes. There are observers who would not consider the nonspecific histologic alterations encountered in this case as inconsistent with the diagnosis of lichen scrofulosorum.[12] When, however, sufficient specimens of skin have been available for study it appears that the recognized and accepted characteristic changes have been practically constant (Lesseliers,[13] Lewandowsky[14] and Jadassohn[2]). It is likely, therefore, that the presence of nonspecific alterations in the many sections prepared for study in my case militates seriously against the diagnosis of lichen scrofulosorum.

3. Internal Medical Aspects. As the eruption resembled lichen scrofulosorum in some of its attributes, it was assumed too readily that the pulmonary process was tuberculous. It is true that the patient was admitted to a sanatorium with the tentative diagnosis of pulmonary tuberculosis of adult type, but a critical review of the history and observations revealed that the internal condition was a typical example of pulmonary abscess secondary to a tonsillectomy. Moreover, from the beginning of the period of hospitalization the Pirquet and Mantoux tests made with as much as 1 mg. of old tuberculin were negative. There was no reason to believe that the skin was in a "specific anergic" phase at that time, the occurrence of which, moreover, would have been most unusual in lichen scrofulosorum. Subsequent tests with tuberculin, as well as more recent Pirquet tests, were negative. At no time did the roentgenograms of the chest reveal evidence of tuberculous hilar glands, nor were there any signs indicative of "scrofula" or of dissemination in the secondary stage of Ranke. The evidence against the assumption of active tuberculosis in any form appeared to be unequivocal in this case when the data were examined more closely. Finally, the association of lichen scrofulosorum with true tuberculous parenchyma-

11. Wallhauser, H. J. F.: Lichen Pilaris seu Spinulosus (Crocker), Arch. Dermat. & Syph. **8**:776 (Dec.) 1923.

12. Klingmüller.[6] Nobl.[7]

13. Lesseliers: Contribution a l'étude du lichen scrophulosorum, Ann. de dermat. **7**:897, 1906.

14. Lewandowsky, cited by Volk.[5]

tous involvement of the lungs is most unusual;[9b] there are few, if any, authentic instances of this combination described with sufficient detail to indicate a relationship between the two processes.

In regard to the precise etiology of the eruption it might be argued that it arose primarily as a consequence of toxemia from the pulmonary process or secondarily as a result of the high voltage roentgen therapy administered to the lung. However, the history indicated that the dermatosis apparently made its initial appearance at a time when the pulmonary focus was definitely in the stage of healing and many months after the last roentgen treatment. The cause of the eruption must, therefore, in my opinion, remain sub judice for the time being.

SUMMARY AND CONCLUSIONS

There is recorded an unusual example of lichen pilaris seu spinulosus in which the eruption resembled lichen scrofulosorum in many particulars, as attested by the acceptance of the latter diagnosis by many competent dermatologists.

The coincidence of the dermatoses with pulmonary disease appeared to corroborate the diagnosis of lichen scrofulosorum, of tuberculous etiology.

However, careful investigation revealed that the pulmonary process was not tuberculous from the clinical, surgical and laboratory points of view, and two biopsies, of numerous sections of skin, disclosed nonspecific histologic alterations unlike those encountered in instances of characteristic lichen scrofulosorum.

When adequate histologic study fails to reveal characteristic changes, conditions reported as lichen scrofulosorum should be subjected to close scrutiny before being classified in that category. In this manner errors in diagnosis will be avoided in many cases. There is need to reexamine more critically recorded instances of lichen scrofulosorum in which the characteristic minute anatomic changes were not present.

100 Central Park South.

SENSITIVITY TO TRYPARSAMIDE

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AND
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Complete reports on the toxic effects of arsenical preparations in the treatment of syphilis have been made by the Medical Research Council,[1] by Phelps and Washburn,[2] by Kerl [3] and by Cole and his co-workers.[4] However, few cases have been recorded in which a reaction followed the use of tryparsamide. This may be due in part to the fact that tryparsamide is used infrequently except in treatment of paresis.

The report of Cole and his co-workers includes a case of dermatitis and a case of severe gastro-intestinal reactions following the administration of tryparsamide. Robinson [5] also reported a case of fixed dermatitis due to tryparsamide, the first mention in the literature.

In a case of sensitivity to tryparsamide which we observed there were such severe disturbances that the occurrence was thought worthy of record.

REPORT OF A CASE

M. L. C., a man aged 55, was admitted to the Hastings State Hospital on March 6, 1932, with the diagnosis of dementia paralytica with marked mental deterioration. Owing to his poor physical condition treatment was deferred until May 1933, when in view of the improved physical condition and despite the patient's age, treatment was commenced. When the third weekly injection of tryparsamide was administered the patient went into a profound state of collapse within five minutes after withdrawal of the needle. There were generalized blanching of the skin, faint shallow respiratory movements, imperceptible pulse and incontinence of feces and urine. It was impossible to obtain a blood pressure reading, and the heart beat was barely heard. No moisture was noted in the pulmonary fields. Administration of 1 cc. of a 1:1,000 solution of epinephrine

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From the Hastings State Hospital.

1. Report of the Salvarsan Committee, Medical Research Council, Special Report Series, nos. 61 to 70, London, His Majesty's Stationery Office, 1922, vol. 2, pp. 4-94.

2. Phelps, J. B., and Washburn, W. A.: Urol. & Cutan. Rev. **34**:458-476, 1930.

3. Kerl, W.: Salvarsan Schädigungen, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1928, vol. 18, p. 604.

4. Cole, H. N., and others: Toxic Effects Following the Use of the Arsphenamines, J. A. M. A. **97**:897-904 (Sept. 26) 1931.

5. Robinson, H. M.: Fixed Dermatitis Due to Tryparsamide, Am. J. Syph. & Neurol. **17**:507-509 (Oct.) 1933.

hydrochloride gradually revived the patient. Seven days later injection of a half-dose (1.5 Gm.) of tryparsamide preceded by administration of 1 cc. of solution of epinephrine hydrochloride resulted in a reaction similar to the first collapse but less marked, and administration of epinephrine revived the patient. On both occasions a number of patients were given tryparsamide from the same solution and showed no untoward results. However, careful preparation of tryparsamide in triple distillate under the most rigid technic failed to prevent the reaction. The administration of arsphenamine and neoarsphenamine did not produce any reaction. Therapy was discontinued until March 4, 1936, when in order to determine whether the sensitivity had persisted, tryparsamide was again given. Immediately after the injection 1 cc. of epinephrine was administered; within two minutes the patient attempted to vomit; the face became flushed for a few moments and then became pale; there was marked dyspnea, and within five minutes the pulse was imperceptible. Incontinence of feces and urine followed. Recovery was gradual. Subsequent administration of arsphenamine and neoarsphenamine did not result in collapse.

COMMENT

Wirz [6] has observed collapse following injections of arsphenamine and in one case recorded a fatal outcome. Autopsy in that case showed the heart and peripheral vessels to be almost empty. Since the peripheral arteries were strongly contracted, Wirz expressed the belief that circulatory stimulants may be ineffective in treating the collapse. He treated two patients with hot baths (vascular tonics), and in a short time the pulse became perceptible. Sirota [7] reported a case of sensitivity to neoarsphenamine in which severe pain in the buttocks and sacrum, flushing of the face and dilatation of the pupils were observed. Moriyama [8] succeeded in transferring sensitivity to arsenic to guinea-pigs by means of serum from hypersensitive patients, the animals exhibiting a typical anaphylactic reaction after intraperitoneal injection of neoarsphenamine. Sulzberger [9] obtained similar results.

While the reaction in our case suggested a nitritoid reaction, there was no persistent blush or suffusion of the face or associated edema. Again, the suspension of respiration and radial pulse suggested a reaction similar to the collapse due to arsphenamine, but no agonizing pain in the renal region was noted. That the trivalent arsenicals arsphenamine and neoarsphenamine did not cause a reaction indicated that there was not a pure sensitivity to arsenic and pointed to a specific sensitivity to the tryparsamide. It is possible that the production of a tryparsamide protein caused a specific hypersensitivity comparable to

6. Wirz, F.: München. med. Wchnschr. **77**:1225-1227 (July 18) 1930.

7. Sirota, L. S.: A Rare Manifestation of Sensitivity to Neoarsphenamine, Dermat. Ztschr. **68**:198-200 (Jan.) 1934.

8. Moriyama, G.: Jap. J. Dermat. & Urol. **29**:1045-1062, 1929.

9. Sulzberger, M.: Hypersensitiveness to Arsphenamine in Guinea-Pigs, Arch. Dermat. & Syph. **20**:669-697 (Nov.) 1929.

the hypersensitivity observed toward specific proteins, albeit not as highly specific as that existing in reactions to pollen or to food.

SUMMARY

A case is reported in which there was a specific sensitivity to tryparsamide but no sensitivity to other arsenicals. The reaction was in the nature of a profound collapse of shock syndrome.

NITRITOID CRISIS FOLLOWING INTRAMUSCULAR INJECTION OF ENESOL

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As I have given hundreds of intramuscular injections of enesol in cases of lichen planus, it is interesting to record one case in which a typical nitritoid crisis followed the injection.

Enesol is a French product, a combination of arsenic and mercury. The manufacturers state that it is a masked resultant chemical combination in which there is a molecule to molecule combination of oxymercuriosalicylic anhydride with mercury methylarsinate; for brevity, after its combination it is called salicylarsinate of mercury.

The following claims are made on the basis of many hundreds of reports: ". . . we can also assert that enesol, as shown in published notes of cases, never gives rise either to a violent Herxheimer reaction or to the nitritoid crisis described by Milian," [1] and ". . . to cause death in an adult man weighing 65 Kg. we should have to inject 16¼ grains (1.05 Gm.) of enesol." [2]

The drug is eliminated chiefly through the urine and may be detected after the second hour following its administration.

REPORT OF A CASE

Mrs. J. M. P., aged 33, weighing 118 pounds (53.5 Kg.) was in good health and normal physical condition, except for a moderately extensive eruption of lichen planus. The laboratory examinations gave negative results.

She was given 2 cc. of enesol in the gluteal muscle. After the injection she dismounted from the table and left the office in a particularly good frame of mind, with no complaints. About fifteen minutes later I was called to the telephone and told that my patient was in the office of a neighboring physician and was suffering intensely. When I arrived at his office a few minutes later I found her exhibiting a general scarlatinal-urticarial eruption so severe that it covered the body, limbs and face, causing a vicious itching. She had been stricken on the street; she stated that she had first noted a constriction of the throat and then a feeling of suffocation associated with a dread of impending disaster. Her pulse was thready; her respirations were shallow and labored; her eyes were glassy, and her face was flushed. Her mental processes were befogged, and she seemed to be in a state of partial collapse; she feared to surrender lest she die. She was given

1. Milian, G.: The Reaction of Herxheimer, Paris méd. **12**:537-548 (Nov. 15) 1913.

2. Coignet: Note on New Soluble Injectable Salt of Mercury, Lyon méd. **102**:1113-1123 (June 5) 1904.

epinephrine and sodium thiosulfate intravenously, and calamine lotion and hot packs were applied locally. She was surrounded by hot water bottles and wrapped in blankets. Later she was given several sips of hot, strong coffee by mouth. After about two hours of severe reaction her symptoms quieted sufficiently to permit her to be taken to her home.

I feel that this was a typical and unusual nitritoid crisis following an intramuscular injection of the form of arsenic known as enesol. The reaction had not been preceded by any sign of sensitivity to the drug after either of the two injections which the patient had received about a week previously.

EXTRACELLULAR CHOLESTEROSIS

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MINNEAPOLIS

"Extracellular cholesterinosis" was the term which Urbach used to designate a unique dermatosis which he studied in great detail in association with Epstein and Lorenz. The observations of these workers, including the results of metabolic and histochemical determinations, were published in several contributions in 1932 and 1933.[1] The patient whose condition they investigated was first presented by Professor Kerl[2] before the Vienna dermatologic society on Oct. 22, 1930, as exhibiting "multiple nodule formation containing much lipoid." In discussing the condition at that time Urbach maintained that the disease could be differentiated from xanthoma histologically although the two conditions were similar clinically. Kerl[3] reported the case in greater detail in 1932. As far as can be ascertained, there have been no other reports concerning extracellular cholesterosis.

For several years a patient with an extremely odd dermatosis was under the care of Dr. Henry Michelson; that patient was later admitted to his service at the University of Minnesota Hospital. It was impossible to make a definite diagnosis at the time although the histopathologic picture was suggestive of an odd form of xanthoma on account of the large amount of fat observed in the sections. The foam and giant cells, however, which characterize xanthoma could not be seen. Later, in comparing the condition with the one which Urbach described it was noted that the two seemed identical. The history, photographs

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1. (*a*) Urbach, E.; Epstein, E., and Lorenz, K.: Beiträge zu einer physiologischen und pathologischen Chemie der Haut: Extrazellulare Cholesterinose, Arch. f. Dermat. u. Syph. **166**:243-272, 1932. (*b*) Urbach, Erich: Lipoidstoffwechselerkrankungen der Haut, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1932, vol. 12, pt. 2, pp. 320-330; (*c*) Kutane Lipoidosen, Dermat. Ztschr. **66**:371-386, 1933.

2. Kerl: Multiple Knotenbildung, reichlich Lipoidenthaltend, Zentralbl. f. Haut- u. Geschlechtskr. **36**:37, 1931.

3. Kerl, Wilhelm: Ueber eine neuartige generalisierte Lipoid-Infiltration mit vorwiegender, zum Teil knotenformiger Beteiligung der Haut und Schleimhaut, in Neisser, A., and Jacobi, E.: Ikonographia dermatologica, Berlin, Urban & Schwarzenberg, 1932.

and sections were sent to Urbach, who studied them and concurred in the diagnosis of extracellular cholesterosis.

CLINICAL FEATURES OF EXTRACELLULAR CHOLESTEROSIS

The patient who was first presented by Kerl and later studied by Urbach, Epstein and Lorenz was a 68 year old woman who noticed pain in the fingers of the left hand two years previously. Within a short time reddish blue raised nodules appeared, at first over the left phalangeal and metacarpal joints and within a year on the arms. Similar rapidly growing lesions had been observed for six months on the dorsum of the right hand and for several weeks on the left knee and right thigh.

The patient was hospitalized for study. On examination nodules were seen on both ears; the tongue was fissured and showed tiny

Fig. 1.—Lesions on the hands in Urbach's case of extracellular cholesterosis (illustration reproduced by permission of Dr. E. Urbach).

hemorrhages over its surface, and the skin over the chest, arms and buttocks was violet and studded with reddish violet patches and lentil-sized firm raised yellow papules, which were arranged in groups in many places. The groups were especially numerous on the left anterior axillary line, the right breast and the upper half of the left arm. On the dorsa of the hands, especially over the finger joints, were indurated raised cyanotic red nodules from 2 to 2.5 cm. in diameter. These lesions showed numerous reddish orange foci within their borders. Similar efflorescences, which frequently coalesced, were present on the extensor surfaces of the forearms. Between the large nodules were small firm yellow papules. The darkly pigmented skin over the abdomen showed numerous striae and fibroma-like tumors, whereas the thighs showed the mottled violet discoloration which was present on the chest, arms and buttocks and were also stippled with small yellow papules. Larger scaly nodules similar to those on the hands and arms were observed on the knees.

The mucosae likewise were abnormal. On the anterior portion of the left side of the nasal septum, two yellow warty lesions were noticed. One was the size of a pinhead; the other was about three times as large and was somewhat shiny. On the soft palate was a pea-sized blue lesion covered by normal mucous membrane. Several small yellow papules were also found in the mouth. At a later date tiny yellow papules developed on the conjunctivae of both eyes and on the uvula and palatoglossal arches.

The general physical examination showed hypertension and mild cardiac decompensation. The lower border of the liver was palpable just below the right rib margin. A noticeable feature was the enlargement and firmness of the spleen. Examination of the blood gave normal results except for a monocytosis, the percentage of monocytes being 9.5.

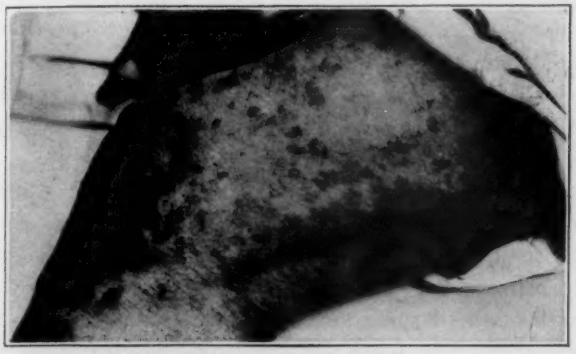

Fig. 2.—Pigmented lesions on the legs in Urbach's case of extracellular cholesterosis (illustration reproduced by permission of Dr. E. Urbach).

During the two pear period in which the patient was observed it was determined that the earliest lesions were small papules (containing at times a central vesicle) which became grouped and confluent, increased in size, turned dark purple and later brown on account of hemorrhage and bore a distinct resemblance to the lesions of erythema multiforme.

HISTOLOGIC STRUCTURE

Urbach traced the histologic structure of extracellular cholesterosis from the earliest stage of the papules two days after their appearance to well developed nodules of two years' duration.

In the smallest yellow papules an atrophic epithelium was raised above spaces (vesicles) which were filled with fibrin, lymphocytes and polymorphonuclear leukocytes. The normal structure of the cutis was lost, and the connective tissue was permeated by lymphocytes, the nuclei

of which were frequently fragmented. Sections stained with sudan III already showed a brownish red substance arranged around the vessels as well as tiny sudanophilic droplets in the connective tissue.

In older lesions the epithelium was thickened, the cells of the basal layer were vacuolated and the normal sharp margin between the epidermis and the cutis was lost. Throughout the latter, especially in the upper portions, was a dense infiltrate made up of round cells and spindle-shaped cells with oval, darkly staining nuclei. The presence of cellular degeneration was in evidence everywhere. The endothelium of the dilated blood vessels and lymph vessels in the papillary bodies was distinctly swollen. There was a striking complete absence of foam cells. The elastic fibers in the upper portion of the cutis had disappeared. By means of staining with sudan III it was observed that the blood vessels were enclosed by brownish red lipoid mantles and that there were irregularly spaced accumulations of sudanophilic substances of various sizes and configurations throughout the connective tissue.

In still older and larger nodules similar changes were noted. The sections stained for lipoids showed such an abundance of sudanophilic matter that the connective tissue ground substance was scarcely visible.

In brief, the histologic picture was similar, except for difference in degree, in lesions of all ages, the cardinal points being a richness of blood vessels, the endothelium of which was severely disturbed, a dense infiltrate consisting of round and spindle-shaped cells, degenerative changes and a heavy deposit of lipoid about the vessels in the younger lesions and throughout the entire cutis in nodules of longer duration. The complete absence of foam and giant cells was a notable feature.

CUTANEOUS LIPOIDOSES

After considering the clinical and histologic features of this odd dermatosis it is relevant to review briefly the disorders of lipoid metabolism which give rise to integumentary changes and to outline, as far as they are known, the various lipoids which are involved.

The term lipoid is a generic name applied to all the substances in the body which in their general chemical and physical properties, and especially their solubility, resemble the fats, which in turn are derived from various fatty acids and glycerin. A classification of lipoids compiled from various sources [4] is given in table 1.

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4. (*a*) Michelson, Henry E., and Laymon, Carl W.: Necrobiosis Lipoidica Diabeticorum, J. A. M. A. **103**:163-169 (July 21) 1934. (*b*) Peters, J. P., and Van Slyke, D. D.: Quantitative Clinical Chemistry, ed. 1, Baltimore, Williams & Wilkins Company, 1931, p. 218. (*c*) Howell, W. H.: Textbook of Physiology, ed. 11, Philadelphia, W. B. Saunders Company, 1930, pp. 31 and 956. (*d*) Kutschera-Aichbergen, H.: Beitrag für Morphologie der Lipoide, Virchows Arch. f. path. Anat. **256**:569, 1925. (*e*) Urbach.[1]

The term lipid, as adopted at the International Congress of Chemistry in 1923, [4b] was intended to designate only phosphatides and cerebrosides, although Schaaf [5] and Wile [6] have since applied it to the total of all fatlike components of tissues of blood that are soluble in ether and alcohol, in other words, total lipoids.

Although cholesterol, one of the sterol group of alcohols, is related to the other lipoids only in its solubility, it can be seen from the table that the other lipoids show common qualities in their chemical make-up. All of them contain fatty acids, and the same acid may be found in different lipoids. Glycerin is present in both neutral fat and unsaturated phosphatides, and similar organic bases occur in more than one lipoid. (Choline occurs in both unsaturated and saturated phosphatides and cerebrosides.)

TABLE 1.—*Classification of Lipoids*

General Group	Individual Example	General Chemical Composition
I. True neutral fat (glycerin esters)	.....	Glycerin and fatty acid
II. Cholesterol and cholesterol esters	.....	Cholesterol and fatty acid
III. Lipids		
1. Phosphatides		
a. Unsaturated.....	Lecithin and cephalin	Organic base; glycerin; phosphoric acid; fatty acid
b. Saturated.....	Sphingomyelin.....	Organic base; phosphoric acid; fatty acid
2. Cerebrosides.....	Phrenasin and kerasin	Organic base; galactose; fatty acid

The normal values for plasma lipoids are: neutral fat, from 100 to 250 mg. per hundred cubic centimeters; fatty acids, from 250 to 450 mg.; cholesterol and esters, from 110 to 150 mg.; phosphatide (lecithin), from 200 to 250 mg., and total lipoids (lipid-Schaaf), from 700 to 800 mg.

Lipoids are found normally in all living matter and are therefore considered as essential components of protoplasm. Their concentration and nature may vary in different tissues, and their exact function is not definitely known. They may also appear abnormally in the skin, mucous membranes, blood, bones and internal viscera, forming the basis for many distinctly varied diseases. Urbach's classification of the cutaneous lipoidoses is given in table 2. The lipoid disturbances which are entirely internal in their localization, such as Gaucher's and Niemann-Pick's disease, were not included.

5. Schaaf, F., and Werner, A. J.: Die Pathogenese der Xanthome, Arch. f. Dermat. u. Syph. **162**:217-239, 1930.

6. Wile, U. J.; Eckstein, H. C., and Curtiss, A. C.: Lipid Studies in Xanthoma, Arch. Dermat. & Syph. **19**:35-51 (Jan.) 1929. Eckstein, H. C., and Wile, U. J.: Lipid Studies in Xanthoma, J. Biol. Chem. **87**:311-317 (June) 1930.

HISTOCHEMISTRY

It is generally accepted that the isolated chemically pure lipoids can be differentiated from one another by histochemical methods. This differentiation is accomplished by application of various lipoid stains on formaldehyde-fixed tissue and by extraction of the lipoids by means of a solvent, such as acetone, ether or absolute alcohol.

TABLE 2.—*Classification of the Cutaneous Lipoidoses (Urbach)*

Type	Chief Features	Lipoid
Generalized Types		
Xanthelasmas (infiltration type)	Palpebral (essential and secondary types) including the Hand-Schüller-Christian disease; foam and giant cells microscopically	Cholesterol and cholesterol esters (intracellular)
Extracellular cholesterosis (Kerl-Urbach)	Multiple reddish brown papules and nodules sometimes resembling erythema multiforme located on extremities, trunk and mucosae; extracellular lipoid deposits, especially as mantles around the vessels; no foam cells	Cholesterol and cholesterol esters (extracellular)
Hepatosplenomegaly; lipoidosis of skin and mucous membrane (Bürger-Grütz)	Yellow firm nodules on skin of face and extremities; lesions of mucous membrane; spleen and liver greatly enlarged; lipemic fundi; increased phosphatides in blood; perivascular lipoid mantles, and intracellular and extracellular lipoid granules	Phosphatides (intracellular and extracellular)
Lipoidproteinosis (Urbach-Wiethe)	Familial disease occurring in the course of latent diabetes; yellowish nodules on skin and mucosae, hyperkeratotic lesions on extremities; hoarseness (laryngeal involvement) usually since birth; no foam cells	Probably phosphatides joined to a protein
Localized Types		
Necrobiosis lipoidica diabeticorum	Urbach states that in one sense this disease might be considered a generalized lipoidosis since there is a hyperlipemia; however, the earliest symptom and the one on which the disease depends is the necrobiosis	Type of lipoid not definitely established
Resorption xanthelasmas	Due to local freeing of lipoids, as in gummas and scars	Cholesterol and cholesterol esters (intracellular)
Lipoid degeneration of the elastins (Kreibich) or imbibitio lipoidica telae elasticae degenerativae (Urbach)	Process occurring in sailors' skin and in cutis rhomboidalis nuchae	Type of lipoid not definitely established

Histochemical methods, however, have only a relative value in differentiating the lipoids that may occur abnormally in the tissues. Kutschera-Aichbergen [4d] concluded after exhaustive experimentation that the color characteristics of a certain chemically pure isolated lipoid cannot always be brought out in the same way in the tissues, where there is usually a mixture of lipoids and where the staining reactions can be influenced by substances in the cell protoplasm near the lipoids. A lipoid that shows a definite staining property in the pure state can show a changed staining reaction or a lack of staining reaction in the tissues.

Thus one cannot say positively that a definite lipoid is present in the tissues because a color is obtained that coincides with the color obtained with the same stain on the same lipoid in the pure state.

Kutschera-Aichbergen stated, furthermore, that until 1925 at least lipoid analysis had been greatly overrated. Heuck [7] expressed the belief that precision with differential staining and extraction methods is impossible. Kaufmann-Lehmann [8] maintained that sudan III is the only reliable stain for lipoids.

Thus it appears that a direct chemical analysis is necessary to ascertain the types of lipoids that are present in any given tissue. The reactions that have been determined for the lipoids in their pure states are shown in table 3.

TABLE 3.—*Reactions for Lipoids*

Stain	Neutral Fat	Free Cholesterol	Cholesterol Esters	Phosphatides
Sudan III.....	Scarlet or orange-red	Scarlet or orange-red	Scarlet or orange-red	Stain poorly (light yellow if at all)
Nile blue sulfate..	Red	Blue-violet	Blue-violet	Blue-violet
Ciaccio.....	Unstained	Unstained	Unstained	Reddish yellow
Smith-Dietrich....	Unstained	Unstained	Unstained	Blue-black
Fischler.....	Used for demonstration of fatty acids			
Schultz.....	Unstained	Unstained	Blue-green	Unstained
Kossa.....	Stains calcium black			
Benda.....	Neutral normal fat, red; necrotic fat, green			
Digitonin.....	Negative	Precipitates	Negative	Negative
Double refraction	Absent	Slight	Positive	Slight

Table 3 shows that double refraction is completely absent only in neutral fat, that cholesterol, cholesterol esters and neutral fat stain well while the phosphatides stain poorly, if at all, with sudan III, and that the phosphatides are best stained with the Ciaccio and the Smith-Dietrich method.

Table 4 shows the results to be expected in fractional lipoid extractions.

In his case Urbach made detailed histochemical studies of lesions of various ages as well as actual chemical analyses of cutaneous tumors, of normal-appearing skin, of subcutaneous adipose tissue, of normal skin from a control patient and of tissue from the lesions of a patient with xanthoma.

7. Heuck, cited by Balbi, E.: Ricerche intorno alla patogenesi della necrobiosis lipoidica diabeticorum Urbach-Oppenheim, Gior. ital. di dermat. e sif. **74**:14-43 (Feb.) 1933.

8. Kaufmann-Lehmann, cited by Balbi, E.: Ricerche intorno alla patogenesi della necrobiosis lipoidica diabeticorum Urbach-Oppenheim, Gior. ital. di dermat. e sif. **74**:14-43 (Feb.) 1933.

The results of the differential stains for lipoids suggested that the lipoid contained in the nodules of extracellular cholesterosis was free and esterified cholesterol. Chemical analysis of both clinically normal skin and the nodules themselves showed an abnormally high water content. The cholesterol content of the lesions was five times greater than that of normal skin and double the normal value even in skin which clinically appeared unaffected.

Realizing that the dermatosis in question was in all probability associated with the lipoid metabolism, Urbach, Epstein and Lorenz investigated their case along that line. Since ordinary xanthoma is frequently related to diabetes, tests for dextrose tolerance were made, but no signs of diabetes were discovered. The cholesterol ingestion test of Burger and Habs, which consists of administration of 5 Gm. of cholesterol in 100 Gm. of olive oil, caused no hypercholesteremia, the result signifying a disturbance of the liver. In normal persons the cholesterol content of the blood usually is doubled about four hours after the ingestion of

TABLE 4.—*Fractional Lipoid Extractions*

Solvent	Lipoids Extracted	Lipoids Not Extracted
Acetone	Neutral fat, cholesterol esters, acetone-soluble phosphatides, fatty acids	Unsaturated and saturated phosphatides and cerebrosides
Ether	Unsaturated phosphatides	Saturated phosphatides and cerebrosides
Absolute alcohol	Saturated phosphatides and cerebrosides	

the lipoid. The galactose tolerance test of Bode also pointed to a disorder of the liver. This test consists of a study of the sugar content of the blood and urine after the ingestion of galactose. In view of the results of these metabolic studies and because of the fact that palpation indicated a firm splenic tumor, Urbach and his co-workers concluded that the disease which they were investigating was a systemic and not a purely cutaneous one.

REPORT OF A CASE

History.—A girl aged 16 stated that her general health had always been good. The eruption on her skin appeared when she was 5 years old, consisting of small "water blisters" which seemed to become infected and later turned into solid "pimples." Within the course of a year similar lesions appeared on both arms and legs and on the buttocks. The patient had never noticed any eruption on the chest, abdomen, back, face or neck or in the mouth.

After the first year of its existence there was no appreciable change in the extent of the eruption, although the small lesions seemed to coalesce, forming larger nodules, especially on the backs of the hands and knees and around the ankles. At various intervals the lesions apparently became superficially infected,

giving rise to small eroded areas which healed within a period of two or three weeks. Occasional mild itching was the only symptom.

Examination.—The face, neck, chest, abdomen, axillae, back, palms and soles were entirely free from eruption. No lesions could be seen on the lips, buccal and nasal mucosa, tongue, palate or conjunctivae. The skin of the legs and buttocks was affected by a peculiar brownish violet mottled pigmentation involving areas which were atrophic and wrinkled and through which the superficial veins could be visualized. In these areas also were numerous flat atrophic scars which represented the sites in which the lesions had been previously infected and eroded. The parts affected by the pigmentation, atrophy and scarring were interspersed with numerous superficial excoriations.

Fig. 3.—Firm dark red nodules on the dorsa of the hands.

The primary lesions were sharply demarcated, yellowish brown papules from 2 to 4 mm. in size, which had smooth surfaces and were definitely raised above the niveau of the surrounding normal skin. These lesions were present on the thighs and calves, on both the upper and the lower portions of the arms and over the buttocks.

On the dorsa of the hands, especially over the finger joints, and about the elbows, knees and the achilles tendons were large scaly nodules which varied in size and shape but which were for the most part round or oval and from 1 to 4 cm. broad. They were brownish red and firm and contrasted sharply with the surrounding skin. Some of the larger lesions contained minute yellowish orange puncta.

The entire eruption, consisting of the small papules and large rough nodules accompanied by mottled pigmentation, excoriations, scars and atrophy, made an extremely bizarre and striking clinical picture.

The general physical examination showed no important abnormalities. The liver and spleen were not palpable; there were no enlarged nodes in the cervical, axillary or inguinal regions, and the heart and lungs seemed normal.

Studies of the blood and urine showed no signs of diabetes mellitus, the sugar content of the blood during fasting being 96 mg. per hundred cubic centimeters and the urine being free from sugar on several occasions.

Fig. 4.—Mottled pigmentation on the legs.

The blood showed no monocytosis, as was the case in Urbach's patient. The hemoglobin content was 77 per cent; the red blood cells numbered 3,640,000 and the white blood cells 5,500. The differential count showed 76 per cent polymorphonuclears and 24 per cent lymphocytes. The cholesterol content of the blood was not high (123 mg. per hundred cubic centimeters), as Urbach had noted in his patient. The basal metabolic rate was —4 per cent. Serologic tests for syphilis were negative.

Outcome.—At the time of the last hospitalization (from May 14 to June 17, 1934) an overwhelming streptococcic cellulitis of the right thigh developed. Despite

all treatment the process rapidly increased in extent and severity, and the patient died on June 22. Permission for autopsy was refused.

Histologic Examination.—Histologic preparations were made from a well developed nodule on the dorsum of the hand. Part of the tissue was preserved for frozen sections, while the remainder was embedded in paraffin and sectioned in the usual manner.

In sections stained with hematoxylin and eosin it was immediately evident that the important changes were in the cutis rather than in the epidermis, although the latter showed a considerable amount of hyperkeratotic scale, granulosis and vacuolation of the basal layer. The epidermis as a whole seemed thinned, apparently by pressure from the inflammatory process below, and appeared flattened out on account of the absence of the rete pegs.

In the cutis the pathologic process involved an area which was hemispherical. This zone was in turn roughly divided in half, one part being made up of infiltrate and the other of heavy fibrous tissue, the details of which will be described later.

In the inflammatory portion of the lesion the normal fibrillary structure was largely replaced by a diffuse cellular infiltration which extended from the basal layer of the epidermis to the level of the sweat glands. The infiltrate was most intense in the papillary layer and gradually faded out in the deeper portions of the reticular layer of the cutis. There was no sharp line of demarcation below, and toward the lower border thin, elongated projections of the infiltrate penetrated between bundles of connective tissue and around the sweat glands. There was no distinct perivascular arrangement on account of the density of the inflammatory mass, although there were many dilated blood vessels, many of which were engorged with red blood cells, especially in the upper and middle portions of the cutis. The sweat ducts and sebaceous glands were almost entirely lacking within the affected zone. The sweat glands, lying in deeper portions and below the area of greatest involvement, were preserved. The infiltrate was interspersed in many places by clear spaces which were not stained by hematoxylin or eosin. The upper and middle parts of the cutis did not take the stain well and appeared quite pale.

Higher magnification showed that the inflammatory mass was composed chiefly of large cells with round, oval or spindle-shaped, palely staining, vesicular nuclei which filled almost the entire cell. In addition there were many polymorphonuclear leukocytes and fibroblasts and a few small lymphocytes and plasma cells. The endothelium of the dilated, engorged blood vessels was swollen and proliferated, and in some places the lumens seemed entirely obliterated. Although many sections were examined, no trace of foam or giant cells could be found.

On one side of the chief mass of inflammatory tissue the infiltrate gradually became thinner and less diffuse and eventually faded out into normal tissue. On the opposite side of the nodule there were several interesting features.

The epidermis showed hyperkeratosis but no granulosis. Definite atrophy and a distinct increase in the pigment content of the basal layer, which was vacuolated in many places, were observed.

The cutis, which stained less intensely red than normal, seemed homogenized from directly beneath the basal layer to the level of the sweat glands (corresponding to the extent of the inflammatory zone in the adjacent area). The homogenized zone showed only a few nuclei of connective tissue cells and tremendously dilated blood vessels here and there. This might perhaps have been interpreted as the end-result of the preceding inflammatory reaction, which led, in reality, to scar formation. There were no glandular structures within this zone. Although the smooth, waxy appearance of this area suggested the deposit of amyloid, none was found in sections stained with gentian violet.

Tissues stained by the Weigert method showed a complete absence of elastic fibers both within the mass of inflammatory tissue and in the adjacent homogenized zone. They were present and apparently normal at the sides beneath the affected areas.

The Van Gieson stain showed tinctorial changes throughout the entire cutis, the normal red color of the tissues being changed to a yellowish green tint.

The sudan III stain for fat indicated exceedingly numerous droplets of sudanophilic substance penetrating the papillary and reticular layers of the cutis, especially the latter. The fat was not seen deposited in so-called xanthoma or giant cells at any point but occurred irregularly throughout the tissues. Goblets of fat could be seen within the lumens of the vessel in several places, and although the sudanophilic particles seemed especially thick near the vessels there was much fat throughout the tissues at more distant points.

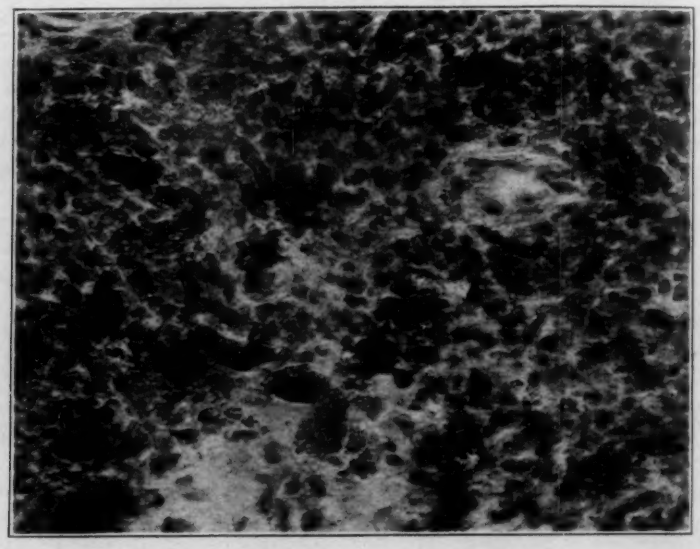


Fig. 5.—High power magnification of a section showing droplets of lipoid distributed extracellularly throughout the tissues. There were neither foam nor giant cells in any of the sections.

Double Refraction: Fresh tissues examined by Dr. J. W. Cavett, of the department of physiologic chemistry, showed double-refractive crystals which suggested the presence of cholesterol esters.

DIFFERENTIAL DIAGNOSIS

In attempting to make a diagnosis in his case Urbach considered idiopathic hemorrhagic sarcoma of Kaposi and xanthoma areolare multiplex of Riehl and Arzt.

Multiple bluish red nodules are seen in the former condition, although localization on the hands as in Urbach's case would be atypical. The histologic pictures of the two conditions, moreover, are not alike.

Urbach studied sections for fat in cases of Kaposi's sarcoma, obtaining entirely negative results, while the presence of sudanophilic matter was one of the most important microscopic features in the sections in his case of extracellular cholesterosis. The cutaneous nodules in extracellular cholesterosis bear a certain clinical resemblance to xanthoma, especially to the Riehl and Arzt type (xanthoma areolare multiplex). The latter condition is characterized by grouped firm brownish red or yellow verrucous nodules, which usually show central involution and atrophy and are surrounded by a pigmented halo. The lesions frequently become painful and ulcerated, and regional lymphadenitis develops. It would seem that differentiation between this type of xanthoma and extracellular cholesterosis on purely clinical grounds would be impossible. However, the histologic picture of xanthoma areolare multiplex is characterized by the presence of the usual foam and giant cells which contain lipoid, a feature entirely absent in extracellular cholesterosis.

When the patient whose condition I studied first came under observation, the bizarre appearance of the lesions suggested erythema multiforme or dermatitis herpetiformis on account of the localization (dorsa of the hands, arms and ankles), the vesicles and the mottled pigmentation with scarring on the buttocks and extremities. The clinical course, lasting for many years, and the lack of fever and constitutional symptoms ruled out erythema multiforme. The large stationary nodules made the picture inconsistent with a diagnosis of dermatitis herpetiformis.

When histologic sections showed the presence of large amounts of lipoid in the tissues, an attempt was made to aline the process with xanthoma. The absence of foam and giant cells and the extracellular deposition of the lipoid nevertheless remained a puzzling feature and stood strongly against such a diagnosis. At about this time Urbach's work was published, and after careful comparison it seemed as if the two patients had practically identical eruptions except for minor details.

PATHOGENESIS

The histologic features of extracellular cholesterosis leave little doubt that the lipoid metabolism is in some way involved in the pathogenesis of the process. In considering the question, Urbach discussed three possibilities:

1. That the condition might be a primary reticulo-endotheliosis leading to a disturbance in the cholesterol metabolism.

2. That the disease was dependent on an infectious or inflammatory process causing cellular destruction in the skin with liberation and deposition of cholesterol in the tissues.

3. That there was a primary disorder of the lipoid metabolism with damage to the connective tissue and endothelium as a result of lipoids circulating in the blood stream.

Urbach expressed the belief that in favor of the first hypothesis (primary reticulo-endotheliosis) were the presence of a relative monocytosis (the percentage of monocytes varying from 9.5 to 12.5), the enlargement of the spleen, the partial reticulo-endothelial character of the infiltrate and the response of the lesions to roentgen therapy. The congo red test for reticulo-endothelial blockage, showing the blood serum to be as deeply stained four minutes as sixty minutes after injection of the dye, also pointed to this view. The total lack of intracellular deposits of lipoid, however, was extremely important evidence against this possibility, since the power of phagocytosis is one of the chief characteristics of the cells of the reticulo-endothelial system.

The sudden onset of the disease, the generalization (involvement of the spleen and perhaps of the liver, mucosal papules, etc.), the acute and exudative character of some of the lesions (vesiculation) and the appearance resembling erythema multiforme suggested that the process might be inflammatory. The patient, however, was in good general condition; she was afebrile at all times; there was no adenitis, and the results of repeated cultures of the blood were negative. The fact that no known inflammatory condition, either acute or chronic, leads to such a high grade disturbance of the lipoid metabolism argues strongly against the theory of inflammatory etiology.

Urbach had the opportunity to make histologic studies of lesions of all ages in his case, and his observations pointed to a great deal of evidence favoring the concept that the pathogenesis of extracellular cholesterol is closely linked with a primary disturbance of the lipoid metabolism. Even in lesions scarcely a day old he noted a disturbance of the endothelium of the blood vessels while the other cutaneous tissues were entirely normal. Brownish red droplets could already be seen in the vessel walls, and since treatment of the specimens with digitonin at this time showed precipitation, Urbach assumed the lipoid to be free cholesterol.

In the well developed papules (which were a few days older) cellular and especially nuclear degeneration became evident, and staining with sudan III disclosed brownish red masses in areas of the cutis which appeared as open spaces in sections stained with hematoxylin and eosin. Urbach expressed the belief that these observations indicated a disturbance depending on a chemical substance (the blood-borne lipoid), deposited at first in the walls of the blood vessels and later in the surrounding tissues and resulting in irritative and inflammatory changes.

Urbach deduced that the lack of hypercholesteremia was due to the great absorption of the lipoid in the tissues. He held the opinion that the response of the lesions to roentgen rays was dependent on a physicochemical change in the lipoid permitting increased diffusibility and resorption.

From the study of only two patients it is of course impossible to draw far reaching deductions as to the pathogenesis of extracellular cholesterosis. In the first place, it seems reasonable, in view of the clinical resemblance to xanthoma and the histologic observation of large amounts of lipoid substances, to classify the dermatosis with the disturbances of lipoid metabolism.

The next logical step seems either to establish the disorder as a peculiar variant of generalized xanthoma or to separate it entirely from that group. It cannot be separated from xanthoma on the basis of the clinical aspect of the lesions, but the total absence of foam and giant cells is strongly against the possibility that the condition is an atypical form of xanthoma.

Only the lapse of time and the continued study of more cases will permit further statements as to the pathogenesis. Urbach's reasoning, however, in trying to establish that the disease is neither a primary reticulo-endotheliosis nor an infectious process but represents a primary disturbance in the lipoid metabolism seems logical and correct.

CONCLUSIONS

1. The rare condition which Urbach termed "extracellular cholesterinosis" seems to be a definite entity.

2. The total absence of foam and giant cells speaks against the possibility that the condition is an atypical form of xanthoma.

3. Definite conclusions as to the pathogenesis of extracellular cholesterosis are as yet impossible, although it appears that the condition is a primary disorder of the lipoid metabolism.

ABSTRACT OF DISCUSSION

Dr. C. Guy Lane, Boston: The condition described is unique, and the case has been worked up well. The disorder corresponds perfectly to that described by Urbach. There is little information in the literature about it, and the classification and the pathogenesis offer numerous opportunities for speculation.

One is tempted to group disorders of this type among the atypical xanthomas, but the histologic picture, which fails to show foam cells and giant cells, practically rules out that relationship. The course of the disease in Dr. Laymon's case—the duration of ten years or more, the nodules, the papules, the atrophy, the scarring and the irregular pigmentation—suggests, of course, a generalized factor.

As Dr. Laymon has stated, this disturbance of lipoid metabolism manifested itself entirely by an extracellular deposition of cholesterol. Even in the sections taken from the earliest lesions staining with sudan III showed brown-red

droplets in connective tissue and a deposit about the blood vessels, with a degenerative process beginning early in the disease.

It is not possible at this time to determine whether the disorder is a result of an inflammatory process; neither is it possible to classify it with any degree of surety as a primary disturbance of lipoid metabolism as Urbach does. It is without question a disturbance of metabolic activity with reference to lipoids, but there seems to be fair evidence of its inflammatory origin.

If reference is made to the earlier lipoid studies of Wile and others, it does not appear that the lesions of xanthoma are primarily due to cholesterol. In this type of cutaneous lipoidosis increased amounts of other lipoids are observed in the lesions as compared with the amount of cholesterol, and the high cholesterol content of the blood is an associated factor of the disordered fat metabolism and not necessarily the primary cause of the xanthoma lesion.

The cholesterol content of the blood in Dr. Laymon's case was practically normal. Wile has indicated in his studies that there is no parallelism between the nature of the lipoids and those of the tumor formed, and he further suggested that the nature of the lipoids in the xanthoma is more dependent on the activity of the tissue than on the nature of the lipoids observed in the blood.

It is well known that trauma or activity produced by trauma may result in the formation of xanthomatous deposits, and it is possible that an inflammatory process might provide the necessary basis for this so-called activity for certain extracellular deposits.

Dr. Hamilton Montgomery, Rochester, Minn.: Doctor Laymon has mentioned necrobiosis lipoidica diabeticorum, a condition which also shows quite a bit of extracellular deposit of lipoids in the skin. I wish to call attention to another condition which Urbach described, namely, lipoid proteinosis, which is not an extracellular cholesterosis but shows extracellular deposits of phosphatides in the skin. In a slide stained with sudan III obtained from Professor Urbach's clinic there were lipoids deposited about the capillaries, extending up into the epidermis, lying in the dendritic cells and also lining the sweat glands—in other words, deposits duplicating the histologic picture of hemosiderin deposits in hemochromatosis. There were no xanthoma foam cells or Touton giant cells.

In regard to extracellular deposits of lipoids mention must be made of histiocytoma of Worringer and of certain cases of dermatofibroma lenticulare in which deposits of both hemosiderin and lipoids may be observed. These conditions are all worthy of careful investigation in order that more may be learned about xanthomas in general.

Dr. Carl W. Laymon, Minneapolis: Until a few years ago there was a tendency to call all cutaneous lipoidoses xanthoma. In view of Urbach's work one should attempt to differentiate further and to classify these conditions. Clinical differentiation is frequently impossible; hence one must resort to histochemical methods by means of differential stains for fat and extraction of the tissues with fat solvents.

Most authorities agree that it is possible to differentiate various lipoids in their pure state by means of appropriate stains. When the same lipoids are in the tissues, however, especially in combination, differentiation becomes difficult.

As to necrobiosis lipoidica diabeticorum, my co-workers and I have observed a number of cases at the University of Minnesota, and I agree with the view expressed by Dr. Lane that trauma is often an exciting factor. Necrobiosis lipoidica diabeticorum is apparently the local manifestation of a generalized disturbance of the lipoid metabolism dependent on underlying diabetes.

Clinical Notes

ALOPECIA AREATA ARTIFICIALLY PRODUCED BY INTRAVENOUS INJECTION OF QUININE HYDROCHLORIDE AND ETHYL CARBAMATE (URETHANE)

ALEXANDER BREGMAN, M.D., ENGLEWOOD, N. J.
Associate Dermatologist, Englewood Hospital

A case of alopecia areata in which the lesions were artificially produced by intravenous injections of quinine hydrochloride and ethyl carbamate (urethane) is reported. The injections were given for obliteration of varicose veins, and the discovery of lesions of alopecia areata was accidental. In my opinion this case points to the sympatheticotonic origin of alopecia areata.

REPORT OF A CASE

Mrs. E. B., aged 32, had one child. The family and the past personal history were irrelevant. The patient had never had any disorder of the skin or scalp, and the general physical and laboratory examinations gave negative results. In May 1934 the patient was given an injection of 2 cc. of quinine hydrochloride and ethyl carbamate to obliterate a varicosity on the right leg. No further injections were given. In May 1936 she returned with another small varicosity on another part of the right leg. She was again given an injection of 2 cc. of quinine hydrochloride and ethyl carbamate. Two weeks later, when she reported for a check-up, she casually mentioned that about ten days after the injection she had discovered a bald spot in the occipital region of the scalp. Her attention was drawn to it by a peculiar sensation as if "something was creeping around the skin." There was a typical patch of alopecia areata. After being further questioned the patient stated that in 1934, about ten days after she had received the first injection, her friends had called her attention to two bald spots on her head. The spots disappeared spontaneously about three months later.

COMMENT

The appearance of the lesions of alopecia areata after injections of quinine hydrochloride and ethyl carbamate appears to be more than mere coincidence. It can be adequately interpreted in the light of the sympatheticotonic theory of alopecia areata.

It is an established fact that many patients with alopecia areata show a definite sympatheticotonia. This statement is illustrated by the following observations reported by Feit, Throne and Myers in a paper on alopecia areata and its relation to metal retention, read at the International Congress of Dermatology and Syphilology in Copenhagen, Denmark, in August 1930.

1. Microscopic examinations of the capillaries showed that those in the areas of alopecia were either markedly contracted or not visible.

2. If the anterior part of the lower concha is sprayed with a 1:1,000 solution of epinephrine hydrochloride and the mucosa is struck with a probe, a red line develops, which stands out prominently on the contracted white background. All the patients with alopecia areata examined by Drs. Pierce and Stein showed the latter phenomenon, the blanching line being present for as long as forty minutes.

3. A difference was found between the tonicity of the arterioles of the area of alopecia and that of the arterioles of other parts of the body when one drop of a 0.01 per cent solution of histamine was applied to the scalp on the hairless area and on the flexor surface of the forearm. The wheal of the scalp was about one-fourth the size of the wheal on the forearm. In normal persons the size of the wheal is the same in the two locations.

It is a well known fact that a large number of patients with alopecia areata have a history of shock or exposure to cold. Cold seems to cause angiospasm of the blood vessels which are supplied with vegetative nerve fibers. Angiospasm causes capillary constriction, interruption of blood supply and loss of hair. Quinine seems to act in a similar way. It is known that quinine causes contraction of unstriped muscles, as evidenced by the fact that it is used to stimulate uterine contractions by way of the sympathetic system. It is logical to assume that in the case reported the quinine hydrochloride caused angiospasm of the blood vessels in the skin, with the resultant capillary constriction, interruption of blood supply and ultimate loss of hair. Since a nervous shock or exposure to cold does not produce lesions of alopecia areata in all but only in certain persons it is necessary to assume the presence of sympatheticotonia, that is, of a sympathetic nervous system with a ready and abnormally strong and long-sustained response to any sympatheticotonic agent (a nervous shock, exposure to cold or action of certain drugs, such as quinine), in persons in whom such lesions are produced. When using the word sympatheticotonia one must realize that this pathologic state of the sympathetic system does not necessarily involve the whole system but may be limited to a certain part of it. The difference in reaction is illustrated by alopecia areata and Raynaud's disease. These two conditions have many points of similarity. In my opinion they are manifestations of an identical pathologic mechanism with different localization of the process.

CONCLUSION

The study of the case reported leads me to believe that in many cases of alopecia areata there is a vasomotor neurosis. One must assume the presence of hyperexcitability of the sympathetic nervous system, which is precipitated into excessive action by some additional factors (nervous shock, exposure to cold or action of drugs), with the resultant clinical manifestations in the form of lesions of alopecia areata.

4 Dempsey Avenue, Edgewater, N. J.

UNUSUAL ARSENICAL KERATOSIS

Report of a Case

EUGENE F. KELLEY, M.D., YONKERS, N. Y.

Reports of eruptions accompanied by keratosis of the palms and soles caused by retention of arsenic, as proved by clinical observation and by the presence of

arsenic in the urine, the blood and the skin and its appendages, are not uncommon in the dermatologic literature. The lesions are more or less similar clinically, consisting of thickening of the horny layer in the form of discrete plugs, plaques or diffuse involvement, and vary in thickness. The occurrence of exfoliation *en masse* in the form of complete casts of the hands, with arsenic as a causative factor, is rare, and the reporting of the following case is, I believe, justified.

REPORT OF CASE

An American-born housewife aged 33 presented herself at the dermatologic clinic of the Yonkers General Hospital on Sept. 28, 1935, complaining of a "loosening of the outer skin of both hands, which began five days before as dryness and wrinkling." There was a uniform exfoliation *en masse* of both hands attached about the finger-tips and wrists. On September 30 the exfoliation was complete; according to the patient the casting off of the skin was "like removing gloves." The skin of the hands and fingers was slightly erythematous, and there was a sensation of burning and itching. About the wrists were dry white scales. The finger-nails were normal. The ankles were swollen, and the plantar surfaces of both feet were hyperkeratotic. The patient refused to submit to further examination. She stated that she had had no recent illness, had not handled irritating substances and had not taken drugs.

Despite numerous requests she did not present herself again until Nov. 14, 1935. At that time exfoliation in large strips of the hands and fingers was present, being more pronounced on the palmar surfaces than on the remaining parts. The ankles were swollen, and the plantar surfaces of both feet were hyperkeratotic. Except for some slight scaling of the elbows and wrists and a general dryness the skin was normal. The physical examination in other respects gave essentially normal results. The heart and lungs were normal. The temperature, pulse rate, respiratory rate and blood pressure were within normal limits. There was no palpable mass or tenderness in the abdomen. The pupils reacted to light and in accommodation, and there were no changes in the eyegrounds. Neurologic tests elicited no objective signs. The patient complained of frequent bowel movements, polyuria, extreme thirst, abnormal appetite and a tingling, burning sensation with formication. Further questioning revealed the fact that three years before she had suffered from pneumonia and rheumatism. She had a recurrence of rheumatism six months and again two months before she was seen, and during these attacks she received various medications. She admitted that she frequently drank whisky of a questionable character.

The specimens were complete casts of both hands terminating at the wrists and had punched-out oval holes on the dorsal surface of the distal end of each finger corresponding to the perionychial attachments.[1] At first glance the specimens had an artificial appearance; closer observation, however, disclosed all the usual wrinkles, furrows and ridges (cristal cutis) found on the skin of the hands.

1. The specimens were presented at the meeting of the New York Academy of Medicine, Section of Dermatology and Syphilis, on Oct. 1, 1935 (Arch. Dermat. & Syph. **33**:912 [May] 1936).

The thickness was uniform, being about 0.25 mm. Microscopic examination showed the specimen to consist entirely of cornified cells.

The urine contained arsenic (quantitative analysis was not done) but no albumin, sugar or casts. The blood count was normal. The Wassermann reaction of the blood was negative. Analysis of the exfoliated specimen by Dr. C. N. Myers revealed 500 micromilligrams of arsenic in 100 Gm. of dried substance, or from fifteen to twenty times the normal content. Specimens of the hair and nails could not be obtained as the patient refused further cooperation.

COMMENT

The source of arsenic in this instance could have been medication, but most likely it was whisky of a questionable character.[2] The paresthesia complained

Cast-off skin of the hands.

of may have been a symptom of chronic arsenical poisoning.[3] Of greater interest in this instance were the underlying processes which produced the rapid casting off of the horny layer in a uniform manner in a comparatively short time. The normal elimination of the offending agent, arsenic, through the skin was for some reason interfered with, and the arsenic was deposited in the skin, producing irrita-

2. Ayres, S., Jr., and Anderson, N. P.: Cutaneous Manifestations of Arsenic Poisoning, Arch. Dermat. & Syph. **30**:33 (July) 1934.

3. Cannon, A. B.: Chronic Arsenical Poisoning, New York State J. Med. **36**:219, 1936.

tion and consequent edema which prevented the functioning of the epidermis and resulted in exfoliation.[4]

It is possible that the intake-elimination ratio of arsenic was suddenly overbalanced in the involved areas, the disturbance resulting in a rapid edema which decreased quickly but not before the horny layer was loosened so thoroughly as to be eventually cast off in one piece.

4. Fordyce, J. A.; Rosen, I., and Myers, C. N.: Quantitative Studies in Syphilis, Am. J. Syph. **7**:21 (April) 1923.

93 Radford Street.

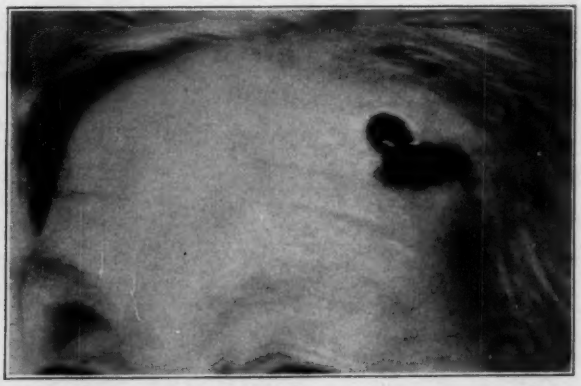
Minor Notes

VALUE OF THE CURET IN TREATMENT OF DISEASES OF THE SKIN

DOUGLASS W. MONTGOMERY, M.D., SAN FRANCISCO

The value of the curet lies in its sensitiveness, and as many diseased tissues are soft, crumbly or gritty, one can with the curet as with no other instrument distinguish between sound and diseased tissue.

The patient whose lesion is shown in the illustration had suffered for years from a slowly growing cicatrizing epithelioma. The active lesion, with its crescentic rolled border and small inclosed ulcer, was the size of a section of a chick-pea, but the scar, which had taken some years to form, was both broad and long



The upper anterior circular cavity shows where the rolled border was curetted. At the other end is the deeper cavity in which lay the cancerous mass. Between them is the shallower surface. This shallow surface and the deeper cavity were entirely covered, partly by scar tissue and partly by normal integument.

and appeared to be sound. However, my experience has taught me to suspect anything emanating from such a source—a bad chicken from a bad egg.

When the lesion was attacked with a curet the scar broke down easily, and under its older extremity, representing the situation where the disease had originated, there was discovered a soft cancerous mass which when curetted left a deep depression extending beneath the apparently sound skin. After the epitheliomatous tissue and the scar had been curetted there was left a denuded surface with at one end a depression under what had been the advancing rolled border and at the other end a deep cavity, a shallower surface intervening.

With the exception of the rolled border and its attendant small ulcer, the whole process had been hidden, either by sound skin or by the scar.

The raw surface obtained was wiped with trichloracetic acid and then exposed to the gamma rays from heavily screened radium for ten hours.

With an instrument less sensitive than the curet one certainly would not have detected either the friable nature of the scar or the presence of the cancer hidden beneath it. As Adamson [1] said regarding all growths of this type, the use of the curet, with local anesthesia, reveals the exact depth and size of a lesion whereas the surface view and palpation are often deceptive.

1. Adamson, quoted by Goldsmith, W. Noel: Recent Advances in Dermatology, Philadelphia, P. Blakiston's Son & Co., 1936, p. 416.

DERMATITIS OF THE EYELIDS DUE TO ALCOHOL

HARRY LEONARD BAER, M.D., PITTSBURGH

I have recently observed two cases of dermatitis involving the eyebrows and the upper and lower eyelids. The picture was the same in both cases, namely, that of a subacute dermatitis about the orbital area associated with puffiness of the eyelids. All the possible suspected contacts were considered and were gradually eliminated. The practice of arching the eyebrows and the application of ordinary rubbing alcohol as an antiseptic were suspected to be the cause of the disorder. This theory proved to be correct, as a recurrence was noted with the reestablishment of the procedure after the condition had been completely relieved. No attempt was made to decide whether or not the alcohol acted as a direct irritant because of its use weekly or whether some irritant present in the rubbing alcohol was at fault. A patch test made daily for five days on the forearm at the same site did not cause any reaction.

Various formulas for denaturing alcohols are specified by the United States government, and the various industries use the one best suited for their needs. The following substances are used in varying proportions for denaturing alcohols: isopropanol, adehol, denatol, calorite, alpha terpineol and compound tecsol.

The following formula is designated by the government as "23 G" and is the most popular for making rubbing alcohol:

Ethyl alcohol	100 gallons (378 liters)
Acetone	10 gallons (37.8 liters)
Sucrose octa-acetate	4¼ pounds (1.9 Kg.)

This is diluted to 70 per cent, and at the manufacturer's discretion any of the following substances in the respective concentrations are further added: zinc sulfocarbolate 4 grains (0.26 Gm.) to the ounce (28 Gm.), boric acid 5 grains (0.32 Gm.) to the ounce (28 Gm.), tincture of quassia 2 minims (0.12 cc.) to the ounce (28 cc.) or diethyl phthalate 1 ounce (28 cc.) to the gallon (3.7 liters). Various perfumes are used by some of the manufacturers.

One can readily see that the dermatitis may be due to the chemical action on the skin not of the alcohol alone but of the various ingredients.

The use of a milder antiseptic should be advised, as arching of the eyebrows is a procedure that remains in vogue.

5050 Jenkins Arcade.

From the Pittsburgh Skin and Cancer Foundation.

Correspondence

TRICHOPHYTIN AND ALLERGY TO TRICHOPHYTIN

To the Editor.—In an interesting article in the August issue of the ARCHIVES entitled "Tricophytin and Allergy to Tricophytin" by Sulzberger, Lewis and Wise, the following paragraph is found:

"Van Dyck, Kingsbury, Throne and Myers, working at about the same time, obtained remarkably effective therapeutic results through the employment of approximately the same method as that outlined by Sulzberger and Wise. These investigators made no mention of the regular reduction in cutaneous sensitivity to tests with tricophytin."

For the basis of this statement Sulzberger and his co-workers referred to an article by Van Dyck, Kingsbury, Throne and Myers entitled "The Use of Tricophytin as a Diagnostic and Therapeutic Agent in Mycotic Infections of the Skin," which appeared in the *New York State Journal of Medicine* (**31**:611 [May 15] 1931). No mention, however, was made by Sulzberger and his co-workers of a second article on the same subject, entitled "Further Experiences with Tricophytin," which appeared in the *New York State Journal of Medicine* for Oct. 1, 1932.

We believe that a few quotations from the literature would establish more accurately the results reported by Van Dyck and his co-workers.

We quote from these articles to show that a reduction not only of cutaneous sensitivity but also of general sensitization was definitely reported and that the whole object of the work was to try to develop a method of general desensitization. Local sensitization, we know, is followed by allergy. Our first investigations on desensitization were reported by two of us (T. and M.) in an article entitled "Sycosis," which appeared in the *Long Island Medical Journal* (**20**:276 [Aug.] 1926).

It is universally accepted that a positive local reaction to an allergen is presumptive evidence of sensitization to a specific substance—we use the term substance in its widest meaning. In the superficial mycotic infections of the skin this sensitization is most probably due to some product elaborated by the infecting agent. The experiments of Lehner and Rajka seem to have shown this and to have shown that it is not necessary for living organisms to be present (Sensibilisierungsversuche mit Tricophyton Extrakt, Tuberculin und Luetin, *Arch. f. Dermat. u. Syph.* **161**:69, 1930).

The passage we wish to quote from our first article (*New York State J. Med.* **31**:611, 1931) is as follows:

"During our observations of patients who had received intradermal tricophytin tests, it was noticed incidentally that many who gave the most strongly positive reactions showed a marked improvement in their skin condition a few days after the test was made. This led to further observation on a series of one hundred cases in which positive reactions were obtained on the first test. In order to determine whether it was possible to desensitize these patients subsequent injections of trichophytin were given intradermally every four or five days. We used a 1:10 dilution for the preliminary test and then followed with a 1:50, 1:10, 1:5, 1:2 and 1:1 as soon as the preceding reaction became less marked" (p. 612).

In our second article (*New York State J. Med.* **32**:1101, 1932) we made the following statements:

". . . Our experience has convinced us that where this sensitization is present, local treatment alone is only of temporary value and that a permanent cure can be obtained only through desensitizing measures" (p. 1101).

". . . When a given dilution failed to give a reaction, the next higher concentration was employed until a concentration of 1-1 was reached. It was very rarely necessary to use full strength Tricophytin" (p. 1102).

"As a rule it was noted in our cases of tinea of the hands and feet that local reactions to the intradermal injection of Tricophytin would gradually diminish unless stronger concentrations were used on successive treatments" (p. 1106).

"Analysis of the therapeutic results indicate that with a small number of treatments very satisfactory clinical findings are obtained. Emphasis is placed on the importance of regularity in treatment and also the necessity of maintaining the concentration adequate to produce a local reaction. Desensitization can only follow under these circumstances" (p. 1107).

From these statements it seems that Sulzberger and his co-workers were hardly justified in stating that investigators (Van Dyck and his co-workers) made no mention of the regular reduction in cutaneous sensitivity to tests with trichophytin.

C. N. Myers, Ph.D., New York.
Binford Throne, M.D., New York.

TRICHOPHYTIN AND ALLERGY TO TRICHOPHYTIN

To the Editor.—The letter of Drs. Myers and Throne was submitted to us for our comment. In our recent article in the Archives (**34**:207 [Aug.] 1936) we simply stated the fact that Van Dyck, Kingsbury, Throne and Myers in their original articles (*New York State J. Med.* **31**:611, 1931) did not mention *regular* cutaneous hyposensitization but discussed the therapeutic effects of injections of trichophytin. We further mentioned that Sulzberger and Wise reported that "repeated intracutaneous injections of trichophytin *regularly* [italics ours] succeed in reducing sensitivity of the skin to trichophytin." This statement is based on the report of successful reduction of cutaneous sensitivity in fifteen of eighteen cases as recorded in the paper by Sulzberger and Wise read before the Section of Dermatology and Syphilology of the American Medical Association at the meeting in Philadelphia, on June 10, 1931, and listed in the program of the Sections (*J. A. M. A.* **96**:1611 [May 9] 1931). Owing to the fact that trichophytin was at that time under consideration by the Council on Pharmacy and Chemistry, this article did not appear in *The Journal* until one year and five months after it was submitted to the editors (footnote, *J. A. M. A.* **99**:1759 [Nov. 19] 1932). We wish to express our regret that we made no specific mention of the fact that Van Dyck, Kingsbury, Throne and Myers reported that they also observed the reduction of cutaneous sensitivity to trichophytin, and we now freely grant the accuracy of this statement. From the chronological sequence of events it is, of course, obvious that the experiments of Van Dyck and his co-workers with trichophytin, while undoubtedly independent, could not have preceded those of Sulzberger and Wise, as the report of Sulzberger and Wise was submitted for publication May 19, 1931, and the first publication of Van Dyck and his co-workers appeared in the *New York State Journal of Medicine* for May 15, 1931. In the recent article in the Archives referred to in the letter of Drs. Myers and Throne

it was our object not to establish priority for Sulzberger and Wise, but simply to call attention to the fact that Sulzberger and Wise and other authors had reported that intracutaneous injections of trichophytin regularly reduce hypersensitivity of the skin to trichophytin and that while all subsequent observers agree on this point, the remarkable therapeutic results of Van Dyck and his co-workers were far superior to those reported by Wise and Sulzberger, who recommended the measure "as by no means suitable for general treatment" (*J. A. M. A.* **99**:1759 [Nov. 19] 1932).

MARION B. SULZBERGER, M.D., New York.
GEORGE LEWIS, M.D., New York.
FRED WISE, M.D., New York.

THE TREATMENT OF ACNE VULGARIS WITH SPECIAL REFERENCE TO ROENTGEN RAYS

To the Editor.—I wish to draw your attention to a conclusion drawn by the abstracter of my article entitled "The Treatment of Acne Vulgaris with Special Reference to X-Rays" which appeared in the *Medical Journal of Australia* (**2**:656 [Nov. 9] 1935). He stated in the ARCHIVES (**34**:500 [Sept.] 1936) that I ascribed the good results I obtained to the fact that "standardization was checked by three dosimeters, and the cutaneous tolerance of most of the patients was tested before treatment was given."

I ascribed the good results not to these factors but to the fact that I did not allow for the extra 20 per cent to 25 per cent of the dose due to secondary radiation which is to be taken into consideration when large areas like the face or the back are treated. Consequently in delivering eight weekly one-fourth erythema doses as measured by the dosimeters over an area of 1 square inch I was actually delivering two and a half erythema doses weekly to the face or back.

I should be grateful if you will correct the impression conveyed by the abstract.

J. C. BELISARIO, M.B., Sydney, Australia.

News and Comment

THE AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY

Notice is again given that written examinations for applicants of group B will be held in various cities throughout the United States on April 17, 1937. Applications must reach the secretary of the board *no later than March 1, 1937.*

Oral examinations for applicants of groups A and B will be held in Philadelphia on June 7 and 8, 1937.

An application blank and a booklet of information may be obtained from the secretary of the board, Dr. C. Guy Lane, 416 Marlboro Street, Boston.

Obituaries

ARTHUR VAN HARLINGEN, M.D.
1845–1936

Dr. Arthur Van Harlingen, one of the last of the old guard of dermatology, died in October 1936, at the age of 91.

Dr. Van Harlingen was the son of John Martin and Isabel Campbell Van Harlingen. He was born in Philadelphia on Oct. 25, 1845. He received his preliminary education at private schools in his home town, and he was graduated from the Sheffield Scientific School of Yale College in 1864, at the early age of 19. Three years later he received his degree of Doctor of Medicine from the University of Pennsylvania School of Medicine. The medical class of 1867 was of great importance to dermatologists for among the members was in addition to Dr. Van Harlingen, Dr. Louis A. Duhring. Dr. Van Harlingen was resident physician at the University of Pennsylvania Hospital and for two additional years at the Pennsylvania Hospital. Shortly after he finished these internships he started practicing in Philadelphia as a specialist in dermatology. From 1871 to 1883 he was chief of the dermatologic clinic of the University of Pennsylvania. He was made professor of dermatology at the Philadelphia Polyclinic in 1883 and held this position until 1895.

In 1888 Dr. Van Harlingen was appointed clinical lecturer in dermatology at the Jefferson Medical College; he held this position until 1890, when he was succeeded by Dr. Henry W. Stelwagon. Dr. Van Harlingen also became dermatologist to the Children's Hospital. He was a fellow of the College of Physicians of Philadelphia and of the American Dermatological Association. He was at one time president of the latter organization.

In 1884 his "Handbook on the Diagnosis and Treatment of Skin Diseases" was published. This publication went through four editions. He also collaborated in the preparation of a "Handbook of Local Therapeutics" in 1893. In the earlier part of his career he frequently wrote on dermatologic subjects and had many articles published in notable journals.

Some present day dermatologists have had the privilege of seeing the great diagnostic and therapeutic acumen of the old guard through close association before the refinements of dermatology appeared and then became daily practice. Those who had the pleasure of close association with Dr. Van Harlingen can bear testimony to his sterling qualities and to the fact that he was a brilliant dermatologic therapeutist and a skilled diagnostician. Dr. Van Harlingen will be greatly missed as one of the pioneers in dermatologic thought and practice.

FRANK C. KNOWLES, Philadelphia.

Abstracts from Current Literature

EDITED BY DR. HERBERT RATTNER

SOME CURRENT CONCEPTIONS OF CUTANEOUS ALLERGIC MANIFESTATIONS. J. H. STOKES and V. C. GARNER, Am. J. M. Sc. **191**:566 (April) 1936.

Stokes and Garner give an excellent review of articles dealing with this much disputed subject, referring to the work of all well known contributors to the question of allergy and commenting on their observations. The articles analyzed have been abstracted in the ARCHIVES.

ROCKY MOUNTAIN SPOTTED FEVER IN PENNSYLVANIA. H. F. FLIPPIN, Am. J. M. Sc. **191**:685 (May) 1936.

A case of Rocky Mountain spotted fever occurring in Pennsylvania is reported chiefly for the purpose of calling attention to the presence of this disease in the East. For epidemiological purposes it is suggested that all cases of the disease, suspected or proved, be reported in order to aid in the study of the disease, especially in rural sections of the East.

In the case forming the basis of this report the usual symptoms were present: onset with chills, fever, headache, pains in the muscles and joints and a macular eruption becoming petechial. The eruption was scattered over the arms, legs, trunk, palms and soles.

After seventeen days the fever subsided, the rash began to fade and an uneventful recovery ensued.

OBSERVATIONS ON THE EFFECT OF MALARIA ON THE WASSERMANN REACTION. R. WILSON JR. and S. J. LEVIN, Am. J. M. Sc. **191**:696 (May) 1936.

Wilson and Levin examined the records of 262 patients, i. e., all the patients with malaria admitted to the Roper Hospital from 1930 to 1934 in whose blood the parasites were found and on whom serologic tests for syphilis were made.

In their analysis the authors excluded the patients in whom there was any possibility of a syphilitic infection, and they found that 6.3 per cent exhibited nonspecific positive reactions. The spinal fluid of one patient showed a positive reaction, which Wilson and Levin considered to be nonspecific and due to the malarial infection.

JAMIESON, Detroit.

BISMUTH BY MOUTH IN THE TREATMENT OF SYPHILIS. C. R. REIN and M. B. SULZBERGER, Am. J. Syph., Gonor. & Ven. Dis. **20**:124 (March) 1936.

According to Rein and Sulzberger, Mulzer and Serefis report that a preparation of stabilized bismuth chloride administered orally brought about excellent results in both experimental (rabbit) and human syphilis. Using this preparation, Rein and Sulzberger carried out a series of experiments on rabbits, and their results in a great measure confirmed those of the previous workers. They express the belief that further experiments with oral administration of bismuth chloride treated with liver extract both in rabbit and in human syphilis is warranted.

THE ORAL ADMINISTRATION OF BISMUTH IN THE TREATMENT OF EXPERIMENTAL RABBIT SYPHILIS. J. E. KEMP and P. D. ROSAHN, Am. J. Syph., Gonor. & Ven. Dis. **20**:131 (March) 1936.

This study concerns the oral administration of potassium bismuth tartrate, bismuth chloride treated with liver extract (bismutrat) and bismuth sodium iron citrate in the treatment of experimental syphilis in the rabbit. The use of these

bismuth preparations had practically no effect on the course of the syphilitic infection in rabbits. This study also shows that it is impossible to use syphilitic rabbits in determining the value of bismuth preparations intended for oral administration in the treatment of human syphilis. The authors express the belief that at the present time it is unwise to suggest the oral use of bismuth salts in the treatment of late stages of syphilis and reprehensible to suggest their use in the treatment of early stages of the disease.

THE PROBLEM OF TREATMENT-RESISTANT SYPHILIS, WITH SPECIAL REFERENCE TO ARSPHENAMINE-RESISTANT SYPHILIS; REVIEW OF THE LITERATURE AND EXPERIMENTAL STUDY. H. BEERMAN, Am. J. Syph., Gonor. & Ven. Dis. **20**:165 (March); 296 (May) 1936.

This is an exhaustive review of the pertinent literature concerning treatment-resistant syphilis together with the experimental data accumulated in an attempt to determine the causative factors.

Beerman's findings may be summarized as follows: Although there is an apparent increase of treatment-resistant syphilis in France and Germany, there is no increase of that form of syphilis in the United States. Treatment-resistant syphilis is variously defined. On the basis of clinical appearances treatment-resistant syphilis can be divided into four major groups. Treatment-resistant syphilis may manifest itself in any stage of a syphilitic infection and may affect any organ of the patient. A number of patients with treatment-resistant syphilis react poorly to arsphenamine. In treatment-resistant syphilis the tendency toward negative serologic reactions is encountered about five times as often as in ordinary syphilis. The diagnosis of treatment-resistant syphilis depends largely on a study of the clinical manifestations and of the course of the disease. The prevention of treatment-resistant syphilis depends to a large degree on the adequate treatment of syphilis in the early stages. The management of fully established treatment-resistant syphilis is discussed. Treatment-resistant syphilis has been ascribed to one, or to the interaction, of three factors: the host, the drug and the spirochete.

Beerman made an experimental study of the characteristics of a strain of Spirochaeta pallida isolated from a patient with treatment-resistant syphilis, comparing the effect of treatment with arsphenamine on rabbits infected with this strain and on rabbits infected with the Nichols strain of S. pallida. The strain of S. pallida isolated from the patient with treatment-resistant syphilis showed an intrinsic refractoriness toward the arsenicals.

GENERAL PARESIS: TREATMENT BY TRYPARSAMIDE—INDUCED FEVER SEQUENCE. H. C. SOLOMON and S. H. EPSTEIN, Am. J. Syph., Gonor. & Ven. Dis. **20**:281 (May) 1936.

Solomon and Epstein report a series of twenty-one cases, comprising nineteen cases of dementia paralytica and two cases of congenital neurosyphilis, in all of which treatment consisted of administration of tryparsamide over a considerable period and subsequently of fever therapy.

The excellent result obtained in every case led the authors to conclude not only that an increased number of preliminary injections of tryparsamide greatly enhances the probabilities of therapeutic success in the treatment of dementia paralytica by fever but that the improvement manifested in the spinal fluid after fever therapy occurs more rapidly if the patient has been prepared first by treatment with tryparsamide.

REUTER, Milwaukee.

IMMUNOLOGIC STUDIES IN HYPERPYREXIA. RUTH WESTLUNG JUNG, Arch. Phys. Therapy **16**:397 (July) 1935.

In 378 determinations of immunologic response among 17 patients in whom hyperpyrexia was produced by diathermy with low voltage high frequency currents, Jung found that the only significant change was a temporary increase in the

number of polymorphonuclear leukocytes. There were no notable changes in the erythrocyte count, the complement content, the opsonins or the phagocytic property of leukocytes. There was a slight increase in agglutinins with succeeding treatments. Jung does not believe that the beneficial effects may be explained on the basis of these phenomena.

FEVER THERAPY. ARTHUR U. DESJARDINS, Arch. Phys. Therapy **17**:206 (April) 1936.

In a general review of fever therapy Desjardins states that the Kettering hypertherm is the most satisfactory physical method of inducing fever, and he discusses the technical considerations of its clinical application. He does not believe that fever therapy will become an office procedure.

In gonococcic infections there appears to be direct destruction of the organisms. The following effects of fever are probably of importance in other diseases: (1) increased flow of blood; (2) increased perspiration; (3) increased respiration; (4) increased rate of metabolism; (5) leukocytosis; (6) decreased sedimentation rate; (7) perhaps increased phagocytosis, and (8) perhaps increased formation of antibodies.

Desjardins believes that the results obtained in syphilis of the nervous system appear to be about the same as after malarial therapy, although he has had little experience with the disease.

In a few cases of scleroderma no strikingly favorable results were obtained, although one patient improved for a time.

Gonococcic arthritis responds in a satisfactory manner.

One hundred and twenty-five patients with simple and complicated gonococcic infections were treated; 25 of these were excluded from consideration for various reasons. Only 8 of the remaining 100 failed to be cured but they derived temporary benefit. In 61 patients cure was effected in from 3 to 5 sessions.

There was a single death among 362 patients receiving 1,810 treatments. In discussing the paper Neymann emphasized the better results obtained by electropyrexia as compared with those obtained by malarial therapy, to which he refers as the "malarial fetish," stating that the mortality resulting from malarial therapy is "between 10 and 30 per cent."

LYNCH, St. Paul.

ALOE VERA IN THE TREATMENT OF ROENTGEN ULCERS AND TELANGIECTASIS. CARROLL S. WRIGHT, J. A. M. A. **106**:1363 (April 18) 1936.

Wright treated eight patients with telangiectasia due to overexposure to roentgen rays or radium by means of the local application of the fresh whole leaf of Aloe vera. No improvement was noted in the telangiectasia, but the texture of the skin was improved in all cases. In two instances of ulceration following the administration of roentgen rays there was a prompt amelioration of the symptoms, and healing of the roentgen ulcers occurred within a few weeks. Aloe vera is applied by spreading the leaf lengthwise or by cutting it into thick cross-sections; it is then macerated and applied to the affected part, covered with an impervious dressing such as waxed paper and kept in place by a bandage. The leaf may also be incorporated into an ointment.

DELINQUENT PATIENTS IN VENEREAL DISEASE CLINICS. FERDINAND O. REINHARD and W. THURBER FALES, J. A. M. A. **106**:1377 (April 18) 1936.

Reinhard and Fales made an analysis of all the new patients admitted to the clinic for patients with venereal diseases of the Baltimore City Health Department during a period lasting from July 1 to Dec. 31, 1933. They found that the minimal optimal number of treatments (forty) was received by more than one half of the white and by one third of the Negro patients. They believe that a detailed study of the attendance at the clinic tends to point out the weak spots in the clinic and field organization and shows where emphasis should be placed in order to improve conditions. Regular attendance is an additional necessity while the patient is in an infectious stage of the disease. If persuasion fails to bring the patient to the clinic at regular intervals, the help of a police magistrate's court is enlisted. Form letters

and personal letters are occasionally sent out, as well as special informative pamphlets for the education of the individual patients. In the case of contacts persuasion alone must be relied on, as it is impossible to summon those persons to a police court. The Baltimore City Health Department maintains five full time social investigators in the Bureau of Venereal Disease. The duty of these investigators, besides visiting delinquent patients, is to find sources of infection of new patients.

COMA DUE TO BROMIDE INTOXICATION. ERLE B. CRAVEN JR. and FORREST J. LANCASTER, J. A. M. A. **106**:1383 (April 18) 1936.

Craven and Lancaster report the case of a woman aged 59 who was in a state of alternate coma and delirium for four months. For many years previously she had taken a patent preparation of bromide during times of emotional or mental distress. The delirium had also been treated by the administration of bromides. A salt-poor diet, which favored the storing of the halide, partly accounted for the syndrome. The only positive etiologic factor disclosed by examination was an extremely high bromide content of the spinal fluid, the bromides amounting to 452 mg. per hundred cubic centimeters (44 milliequivalents per liter). Complete recovery followed elimination therapy.

DEMENTIA PARALYTICA: RESULTS OF TREATMENT WITH DIATHERMY FEVER. SAMUEL H. EPSTEIN, HARRY C. SOLOMON and ISRAEL KOPP, J. A. M. A. **106**:1527 (May 2) 1936.

Epstein, Solomon and Kopp report their experiences in the treatment of dementia paralytica by means of heat produced by diathermy. Thirty-three patients were treated between February 1931 and February 1934, and the results were analyzed as of February 1935. Eight patients were improved and working; seven were improved but not self-supporting; four were improved but were still hospitalized; four were alive but unimproved and ten had died. One patient showed definite evidence of clinical and serologic relapse four years after treatment by diathermy. In a comparison of the results of diathermy with those of malarial therapy and of administration of tryparsamide (observations on series in which both of these remedies were used have been previously reported) it was noted that 27 per cent of the patients treated by diathermy, 14.8 per cent of those treated by malarial therapy and 13.5 per cent of those treated by means of tryparsamide died within two years. Clinical remissions were obtained in 45 per cent of the patients treated with malarial therapy, in 42 per cent of those treated with administration of tryparsamide and in 27 per cent of those treated with diathermy. A return of the spinal fluid to normal followed treatment in 37 per cent of the patients treated with malarial therapy and administration of tryparsamide and in 22 per cent of those treated by diathermy.

LEWIS, New York.

WHY VINCENT'S INFECTION? P. H. BELDING and L. J. BELDING, J. Am. Dent. A. **22**:2114 (Dec.) 1935.

This brief article summarizes the contention of the authors as expressed in previous publications. It is their opinion that trench mouth and pyorrhea, both acute and chronic, are caused "by the activity of Vincent's organisms (the fusospirochetal complex) and should be classified and treated accordingly." They recommend the following prescription, to be used with "surgical and mechanical cleansing": solution of potassium arsenite, 40 cc.; glycerin, 60 cc., and neoarsphenamine, 0.9 Gm.

NOYES, Chicago. [AM. J. DIS. CHILD.]

LEUCOPLAKIA VULVAE, KRAUROSIS VULVAE AND LICHEN PLANUS OF THE VULVA. ELIZABETH HUNT, Brit. J. Dermat. **48**:53 (Feb.) 1936.

Hunt is of the opinion that kraurosis vulvae is a manifestation of lichen planus atrophicus of the vulva. She reports 73 cases of lichen planus of the vulva, in

33 of which there was some degree of atrophy or contraction of the vulva, viz., kraurosis. In many of these cases the disorder was mistakenly diagnosed as leukoplakia vulvae because of the leukoplakic appearance of the vulva, but according to Hunt a distinction can be made from both histologic and clinical features, which are outlined in the article. In a large number of the cases careful examination revealed lesions of lichen planus at other sites. Hunt's cases were observed in the ordinary course of examination of 267 patients suffering from pruritus vulvae and constituted 27 per cent of the group. Leukoplakia vulvae is a precancerous disorder, and lichen planus is not, and the treatment for the two conditions of course differs. In many of the cases, some of which are reported in detail, surgical intervention might have been avoided had a proper diagnosis been made.

THE FACTOR OF IMMUNITY (SEROLOGICAL) IN FURUNCULOSIS. J. FERGUSON SMITH, Brit. J. Dermat. **48**:84 (Feb.) 1936.

Studies were carried out to determine the relative importance in the causation of furunculosis of local factors, such as external infection and local vulnerability of the skin, and general factors, such as the tone of the patient and especially the antibody content of his blood. The problem was approached from three angles: (1) investigation of the flora of the skin in persons suffering from pyoderma, controlled by examination of persons not suffering from that disorder; (2) estimation of the antibody content of the serum in infected and noninfected persons, and (3) observations on the response to immunizing treatment. The conclusions are that toxoid is a more potent means of raising the antibody content of the blood than is vaccine but that the therapeutic effects, like those of vaccines, are at best doubtful. The whole trend of the investigation emphasized the importance of local factors and the relative unimportance of the "immune state" of the patient.

RATTNER, Chicago.

SOME UNNATURAL PHENOMENA IN THE COURSE OF ATEBRIN TREATMENT, WITH SPECIAL DISCUSSION ON MENTAL PHENOMENA THAT HAVE FOLLOWED. KALIGATI BANERJEE, Calcutta M. J. **30**:515 (March) 1936.

In a discussion of toxic symptoms observed after the use of atabrine in the treatment of 500 patients with malaria, the author mentions 5 instances of yellowing of the skin and sclera. He believes that this pigmentation is harmless and that it is due to the acridine contained in the drug rather than to damage to the liver.

LYNCH, St. Paul.

CRURAL PARESIS ACCOMPANYING HERPES ZOSTER. G. P. CHANDLER, Lancet **1**: 1042 (May 4) 1935.

Chandler reports a case of herpes zoster in a man of 60. The eruption occurred in part of the distribution of the posterior root of the fifth lumbar nerve. It was accompanied by signs of involvement of the motor roots of the fourth and fifth lumbar and first sacral nerves. The patient complained of continuous severe pain in the right leg. Two days after the onset a herpetic rash appeared on the anterior aspect of the right knee and on the anterior and outer aspects of the upper third of the leg below the knee. Weakness of the right leg developed, and the right knee jerk was found to be absent and the right ankle jerk very sluggish. Pain disappeared one month after the onset, but there was some residual weakness. The knee and ankle jerks could be obtained only on reinforcement. It is Chandler's opinion that if the modern view of herpes zoster is correct and myelitis of varying extent exists in every case, some degree of paresis of the muscles supplied by the affected segment may occur more frequently than is generally thought and occasionally the major damage caused by the inflammatory reaction may fall on the cells of the anterior horn, causing

paresis of the lower motor neuron type, affecting muscles supplied by one or more segments of the cord. This may accompany a localized herpetic rash, as in the case reported.

WATTS, Washington, D. C. [ARCH. NEUROL. & PSYCHIAT.]

CONTRIBUTION TO THE KNOWLEDGE OF LYMPHOGRANULOMATOSIS VENEREA AS A GENERAL DISEASE. W. E. COUTTS, J. Trop. Med. **39**:13 (Jan. 15) 1936.

The article is an analysis and review of the works on lymphogranuloma venereum published chiefly during the past five years.

Coutts believes that this disease, like syphilis, is widely disseminated and capable of producing lesions in many organs of the body not generally recognized at present as taking part in the lymphogranulomatous syndrome.

A YAWS CAMPAIGN AND AN EPIDEMIC OF POLIOMYELITIS IN WESTERN SAMOA. S. M. LAMBERT, J. Trop. Med. **39**:41 (Feb. 15) 1936.

Lambert describes the method of wholesale treatment of yaws in Samoa from 1923 to 1926. Twenty-five thousand patients received three injections each, with the result that primary and secondary yaws had almost disappeared and only a few children under the age of 4 years required treatment for the disease.

From 1926 to 1931 the method was almost abandoned, and in 1932 primary and secondary lesions were again abundant. In that year injections of neoarsphenamine were given again, but in some districts visited an epidemic of poliomyelitis followed.

In 1933 injections were again given to many thousands of patients, and the lesions of yaws were found to be much improved over the preceding year.

Analysis of the results of Kahn tests made on school children showed that the incidence of negative reactions resulting from treatment with the arsenicals varied from 80 to 16 per cent.

Lambert concludes that the amount of treatment which could be given was not highly effective in sterilizing the blood of patients with yaws.

CELLULAR REACTION TO BACILLUS LEPRAE. E. MUIR, J. Trop. Med. **39**:73 (March 16) 1936.

The hypotheses stated by Muir are based on the factors influencing the degree of resistance to Bacillus leprae and of cellular reaction. The factors are age, debility and number of organisms.

Cellular response to B. leprae is less in the nerves than in the skin, and in cases of resistant infection the organisms are killed in the skin and take refuge in the nerves. From the nerves the bacilli may again invade the skin during a period of lowered resistance.

PRELIMINARY NOTE ON SELF-INOCULATION OF LEPROSY. S. LAGOUDAKY, J. Trop. Med. **39**:81 (April 1) 1936.

Lagoudaky gives an interesting account of the development of leprous lesions after intentional inoculation.

In June 1934 he received one intravenous and two intramuscular inoculations of blood from patients with leprosy. About one month after the last inoculation a pain developed in his right great toe. During the next four months various lesions—lepromas and areas of redness and of anesthesia—developed. At the end of the four months he wished to continue the experiment in order to watch the development of lepromas on the face and the involvement of the cubital nerves. He was persuaded, however, to submit to treatment by intravenous injections of a proprietary form of chaulmoogra oil and by oral administration of the same preparation in tablets.

He reports that the lesions regressed at once and that cure has since continued.

JAMIESON, Detroit.

MALIGNANT DISEASE IN THE BANTU OF JOHANNESBURG AND THE WITWATERSRAND GOLD MINES. CHARLES BERMAN, South African J. M. Sc. **1**:12 (Sept.) 1935.

In a study of malignant disease occurring among the Bantu, an aboriginal racial group of South Africa, Berman found that although sarcoma is twice as common as among European racial groups carcinoma occurs more frequently than sarcoma; this observation is contrary to the opinion of Hoffman and others. The incidence of malignant disease among the Bantu (18.8 in each 100,000) is among the lowest in the world.

There was an absence of epithelioma of the skin among a group of 253 male Bantu patients observed at the mines because of carcinoma; this observation is in contrast with an incidence of 11 per cent observed in 215 Bantu patients at the hospital in Johannesburg (13 cases occurring in males and 3 cases in females).

The incidence of melanotic sarcoma was relatively low: There were 4 cases of involvement of the foot among 53 cases of sarcoma, of which 29 were instances of tumor of soft tissues.

LYNCH, St. Paul.

VARUS NODULOSUS AS A PYODERMIC INFECTION. A. M. TYZHNENKO, S. A. GLAUBERZON and M. KUZNETS, Dermat. Wchnschr. **101**:1083 (Sept. 7) 1935.

The authors report that three patients had eruptions similar to that described by Brooke in 1910 under the name varus nodulosus and state that they consider the eruption to be due to pyogenic infection. Staphylococcus pyogenes-albus was recovered in the two cases which were completely worked up. In both of these the lymphocyte count was high (50 per cent).

AGRANULOCYTOSIS DEVELOPING IN THE COURSE OF ANTISYPHILITIC TREATMENT. W. KLÜVER, Dermat. Wchnschr. **101**:1118 (Sept. 14) 1935.

A 25 year old man was treated for primary syphilis with neoarsphenamine and bismuth. After he had received bismuth and 4.8 Gm. of neoarsphenamine in about one month a necrotic lesion developed at the site of the chancre. The blood picture showed marked agranulocytosis, and the patient died.

THE EXTERNAL APPLICATION OF LIVER EXTRACT IN DERMATOLOGY. O. WARTEMANN, Dermat. Wchnschr. **101**:1122 (Sept. 14) 1935.

Wartemann reports satisfactory results in treating wounds following destruction of tumors by electricity by means of ointments containing a liver extract.

THE BEGINNING OF INTRAVENOUS ANTISYPHILITIC THERAPY IN GERMANY. W. SCHÖNFELD, Dermat. Wchnschr. **101**:1151 (Sept. 21) 1935.

Schönfeld reviews the reports on the earliest attempts to give medication and transfusion by the intravenous route. A considerable bibliography is appended.

CONGENITAL MALFORMATION OF THE THUMB-NAILS. FRIEDRICH DIETEL, Dermat. Wchnschr. **101**:1167 (Sept. 21) 1935.

Dietel describes the condition of a 25 year old man in whom both thumb-nails presented a marked onychodystrophy. There was no family history of similar malformation, and the disorder was definitely not due to trauma.

THE HISTOGENESIS OF PAGET'S DISEASE. J. DÖRFFEL and O. GRIMM, Dermat. Wchnschr. **101**:1169 (Sept. 21) 1935.

An 82 year old woman had a palm-sized scaly erythematous and indurated patch which had appeared two years before in the left genitocrural fold and had spread slowly up to the lower portion of the abdomen and over the pubis. Biopsy showed the typical picture of Paget's disease. The authors consider two forms of Paget's disease: 1. Paget's morbus simplex, which is manifested clinically by

an eczema-like patch usually arising on the breast and presenting a specific microscopic picture. This form causes no glandular involvement. To this form belong the cases of extramammary Paget's disease in which the disease originates in the epidermis, and only in such cases may the disease be considered truly precancerous. 2. Paget's morbus metastaticus, which is associated with carcinoma of the mammary gland. In this form of the disease the Paget cells are cancer cells from the gland which have migrated to the skin. The first form develops slowly and responds well to treatment, while the second has a bad prognosis.

ECZEMA AND HYPERSENSITIVENESS TO WOOL DYES OF THE ANTHRACENE-ALIZARIN-CHROMATE GROUP. HANS KOEHLER, Dermat. Wchnschr. **101**:1173 (Sept. 21) 1935.

Koehler reports the case of a patient who was sensitive to wool treated with dyes of the anthracene-alizarin-chromate group. Patch tests were positive.

THE EPIDEMIC OCCURRENCE OF ERYTHEMA EXSUDATIVUM MULTIFORME. SIEGFRIED LEIPNER, Dermat. Wchnschr. **101**:1178 (Sept. 21) 1935.

In a home for boys, thirty of fifty-six inmates exhibited typical erythema multiforme. Most of the boys affected had had mild coryza from eight to ten days before the outbreak of the cutaneous disorder. No other cause could be found.

THE QUESTION OF DAMAGE TO THE LIVER FROM MALARIA THERAPY. WILHELM MILBRADT, Dermat. Wchnschr. **101**:1182 (Sept. 21) 1935.

In twenty-five patients treated with malaria the results of therapy were investigated in regard to hepatic function before, during and after the course of treatment. Milbradt concludes that damage to the liver need not be feared as a complication of malarial treatment.

THE INFLUENCE OF RADIUM RADIATION ON THE REACTIVITY OF THE SKIN. E. ZURHELLE, Dermat. Ztschr. **72**:129 (Oct.) 1935.

Zurhelle attempted to determine the effect of radium radiation on the skin. He exposed areas of the skin to the action of 10 mg. of radium filtered through 0.5 mm. of brass for about four hours. This was sufficient to cause a moderate erythema. Ten days later he tested these areas with various irritants and allergens and compared the reaction with that evoked on untreated areas. Among the facts noted was an increased tendency to bullous reaction to potassium iodide in patients with dermatitis herpetiformis, to carbon dioxide snow and to ultraviolet radiation. The immediate reaction to intracutaneous injection of histamine and allergens was decreased, but the late reaction was not altered materially.

BLASTOMATOUS DISORDERS (SARCOMAS) PRESENTING THE PICTURE OF MYCOSIS FUNGOIDES D'EMBLÉE. H. FUHS, Dermat. Ztschr. **72**:135 (Oct.) 1935.

Fuhs describes the condition of six patients in whom tumors developed which were clinically suggestive of mycosis fungoides. Biopsy in each instance proved the lesion to be a sarcoma. He concludes that a differential diagnosis between mycosis fungoides arising without previous eruption and sarcoma can be made only by microscopic examination.

ATYPICAL CARCINOMA-LIKE EPITHELIAL HYPERPLASIA OF THE SKIN. FRANZ KOCH, Dermat. Ztschr. **72**:157 (Oct.) 1935.

Koch describes the results of microscopic examination of material removed from two granulomas, one of which developed on the basis of lupus vulgaris and the other on the basis of scrofuloderma. In both cases a hyperplasia of the epithelium suggestive of squamous cell epithelioma was seen, but it was limited

to the zone of tuberculous inflammation and did not extend into the surrounding connective tissue. Furthermore, though there was anaplasia, there were few mitotic figures and no abnormal mitoses. Koch points out that in neither case was there any suggestion of a malignant process clinically and indicates that this is perhaps the final indication in settling a doubtful diagnosis.

UNSATISFACTORY EARLY CURE OF SECONDARY SYPHILIS. J. A. FOLPMERS and H. C. KOEK, Dermat. Ztschr. **72**:162 (Oct.) 1935.

The authors report the case of a patient who received three courses of combined neoarsphenamine and bismuth therapy for secondary syphilis. After treatment the serologic reactions were all negative. About ten months later a neurorecurrence developed. A possible explanation is the fact that the dose (0.15 Gm.) given in the first two injections of neoarsphenamine of the initial course of treatment was too small.

TAUSSIG, San Francisco.

MALIGN MELANOMA OF THE EYELID IN CHILDHOOD WITH METASTASES AND A FATAL TERMINATION. A. D. NOWKIRISCHKY, Klin. Monatsbl. f. Augenh. **94**:521 (April) 1935.

A girl aged 11 years had been treated and operated on for what her family physician called a benign papilloma. The small tumor had been removed on repeated occasions, the last removal being about six months after the treatment was begun. Two months later the tumor had returned, and the child was brought to the ophthalmologic clinic of the University of Basel, Switzerland. There the tumor was radically excised, and three rayings of 230 roentgens each were applied. The growth was histologically an anaplastic malign melanoma with slight pigmentation and round and spindle-shaped cells arising from a nevus of the eyelid. The result seemed to be perfect except for a small recurrent growth, which, however, showed no histologic evidence of the melanoma. No recurrence had occurred after five months' clinical observation as of Nov. 17, 1933.

A later report from the Children's Hospital at Freiburg, Germany, informed Nowkirischky that the child had been admitted to that institution on Dec. 11, 1933, and had died on Jan. 12, 1934. The scar on the eyelid was smooth and free from any irritation, but severe general symptoms existed, which were caused by metastases in nearly every organ, including the kidneys, liver, mammae, ovaries, thyroid gland, pancreas and gallbladder. Vacuoles causing a resemblance to syringomyelitis were observed in the spinal cord.

HEMANGIOBLASTIC SARCOMA OF THE EYELID: SYSTEMATIC DIVISION OF THE ANGIOBLASTIC TUMORS. F. RINTELEN, Klin. Monatsbl. f. Augenh. **94**:463 (April) 1935.

Rintelen reports a case of hemangiosarcoma endotheliomatosum in a girl aged 14. Four months prior to her admission to the hospital nothing could be seen on the lower lid of the left eye; three months prior, a dark red wart the size of a pinhead could be seen. On admission the tumor had a base 8 mm. in diameter and a height of 1 cm. It could not be moved over its layer. Some of its cells greatly resembled those of a spindle cell sarcoma. Rintelen therefore considered it malignant.

In the second chapter of his paper Rintelen discusses the unsatisfactory classification and confusing nomenclature of these tumors. He proposes this division:

1. Homeotypical forms: (*a*) angioma simplex, (*b*) angioma cavernosum and (*c*) angioma endotheliomatosum. These are benign.

2. Heterotypical forms: (*a*) angiosarcoma simplex, (*b*) angiosarcoma cavernosum and (*c*) angiosarcoma endotheliomatosum. These are malignant.

Both types may originate (1) from lymph vessel tissue and (2) from blood vessel tissue.

Incidentally Rintelen rejects the synonym telangiectasia for simple angioma, which designates a frequently congenital new formation of blood vessels; telangiec-

tasia is an acquired enlargement of normally existing vessels. The term naevus flammeus should be used in ophthalmology only in reference to nevi in which the characteristic nevus cells composing these tumors have been observed histologically.

STOLL, Cincinnati. [ARCH. OPHTH.]

SPIROCHETES IN THE LYMPH SYSTEM OF PATIENTS WITH DEMENTIA PARALYTICA. J. L. SKOBSKI, Monatschr. f. Psychiat. u. Neurol. **89**:365 (Oct.) 1934.

Skobski attempted to determine whether spirochetes were present in the lymph glands of patients with dementia paralytica. Five patients who had had malarial therapy and had been hospitalized for several years were studied. In each case material obtained by puncture of the inguinal lymph nodes was injected into the testes of a rabbit. In all the animals chronic orchitis developed, which clinically resembled syphilitic inflammation. Spirochetes were observed in smears obtained from three animals, though examination of the involved tissue after it had been fixed in formaldehyde and stained by the Levaditi method failed to disclose any organisms.

ROTHSCHILD, Foxborough, Mass. [ARCH. NEUROL. & PSYCHIAT.]

JUXTA-ARTICULAR NODES (JEANSELME) IN THE JAPANESE WITH SPECIAL REFERENCE TO THE ROENTGEN PICTURE. K. NISHEYAMA and M. NAGAHAMA, Jap. J. Dermat. & Urol. **39**:152 (Feb.) 1936.

Juxta-articular nodes exhibiting the usual location, size, chronicity, histologic picture and lack of response to treatment developed in two Japanese—a man aged 52 and a girl aged 9 or 10 years. In the girl the condition was said to have been present for three years, making her the youngest patient with the condition on record. The nodules which she presented cast shadows on the roentgenogram; those exhibited by the man did not, but some of his lesions had produced defects in the underlying bone, the nodules fitting into those defects. Photographs accompany the article.

IDE TEST: THE NEW COLORING TEST FOR SYPHILIS. S. IDE and T. IDE, Jap. J. Dermat. & Urol. **39**:214 (Feb.) 1936.

This test, depending for its clearcut practicability on the agglutination or clumping of dyes, seems to be just as sensitive and dependable as the Wassermann test and superior to the Kahn test. The stock solution of antigen is a 95 per cent alcoholic extract of beef heart. After the extract has been kept at 60 C. by means of a water bath for at least seven weeks, cooled and filtered, cholesterol is added at 50 C. and the whole is kept in a dark place of uniform temperature. During the cold season, from October to May, it is kept in a thermostatic incubator.

When the preparation is ready for use 5 cc. of a 5 per cent solution of benzoin is added to 100 cc. of the antigen, and to this is added 0.6 cc. each of a 1 per cent alcoholic solution of crystal violet and of azure II. A drop of the blood to be tested is taken on the concave aspect of a glass slide and diluted with a drop of physiologic solution of sodium chloride. To this is added a drop of the purplish blue antigen. The whole is mixed for about three minutes, the glass slide being placed on a smooth surface, such as the top of a table, and given a horizontal rotatory motion so that the fluid whirls about in the concavity. The reading may be made at once. In intensely positive reactions the clumping of the pigment is observable with the naked eye; microscopic examination, however, is necessary for less intense reactions.

No English translation of the legends to the illustrations in color representing the different degrees of positivity is given in the original English abstract. Figure 1 shows a macroscopic view of an intensely positive reaction; figure 2, the microscopic appearance of a moderately strong reaction, showing the clumps of pigment among the intact erythrocytes; figure 3, a mildly positive reaction, and figure 4, a negative reaction.

J. W. BRENNAN, Chicago.

Society Transactions

NEW YORK ACADEMY OF MEDICINE, SECTION OF DERMATOLOGY AND SYPHILIS

FRANK C. COMBES, M.D., *Secretary*

March 3, 1936

MAX SCHEER, M.D., *Chairman*

PEMPHIGUS OF THE EYES. Presented by DR. A. BENSON CANNON.

Mrs. L. R., aged 72, Hungarian, is presented from the New York City Hospital. She has been blind for the past three years; the symptoms of sore mouth and weakness appeared only two years ago. Sixteen years ago the patient had hemiplegia, but she claims that except for that she has always been in good health. She has also undergone cholecystectomy and appendectomy.

In both eyes there are adhesions of the lower lid to the eyeball and complete obliteration of the lower cul-de-sac. The eyeballs besides being adherent are completely shrunken. The mucous membranes of the mouth and lips, particularly on the roof of the mouth, show ruptured bullae.

The Wassermann reaction was negative. Chemical examination of the blood showed 30 mg. of nonprotein nitrogen and 190 mg. of sugar per hundred cubic centimeters. The Pels-Macht test showed a phytotoxic index of 40 per cent.

FIXED ERUPTION DUE TO ARSENIC. Presented by DR. FRANK VERO.

A. J., a Negress aged 35, born in the British West Indies, a housewife, is presented from the service of Dr. Dillingham at the Polyclinic Hospital. She has numerous smooth grayish deeply pigmented areas with fading borders. The lesions vary in size; they are scattered about the neck, especially posteriorly, the upper portion of the chest, the lips and proximal areas, the axillae, the antecubital fossae, the inner aspects of the thighs and the dorsa of the hands. The patches are discrete and confluent. The skin elsewhere is normal. There are no other types of lesions.

The Wassermann reaction was positive in October 1930.

Treatment has been as follows: In 1930 the patient received four injections of neoarsphenamine and three injections of a bismuth preparation. She was referred to the City Hospital in 1931. At the Polyclinic Hospital in 1932 she received four injections of neoarsphenamine and seven injections of a bismuth preparation; in 1933 she received twenty-nine injections of a bismuth preparation; in 1934 she had one injection of neoarsphenamine followed by a reaction, eighteen of a bismuth preparation, five of bismarsen and seven of silver arsphenamine (a total of 1.05 Gm.). In 1935 she had three injections of silver arsphenamine (a total of 0.45 Gm.), fifteen of a bismuth preparation and seven of mapharsen (a total of 0.28 Gm.). In 1936 she received three injections of mapharsen (0.04 Gm.), one of a bismuth preparation and three of sodium thiosulfate (a total of 3 Gm.).

The Wassermann reaction has never been negative. The Wassermann and the Kahn reaction were both 4 plus on Oct. 18, 1935.

There is no history of any previous eruption except ringworm of the axilla. The patient first noticed pigmentation on her lips sixteen months ago. She states that the pigmentation increases after each injection of silver arsphenamine or of bismuth arsphenamine sulfonate and that she has some itching which lasts for about two days, in these areas after each intravenous injection. Bismuth does not affect the pigmentation.

Biopsy showed a portion of pigmented skin in which there was a melanin-like pigment scattered throughout the epithelium and deposited also in the connective tissue cells of the corium. Sections stained with hematoxylin and eosin showed no deposit of silver pigment. There was a low grade chronic inflammatory lesion involving the skin, which centered particularly around the smaller blood vessels and suggested some type of low grade fungous infection. Special stains made with potassium ferrocyanide showed no positive evidence of any metallic deposits in the skin.

DISCUSSION

DR. E. WILLIAM ABRAMOWITZ: This is a characteristic fixed eruption with marked pigmentation. There is a definite history that after each injection the lesion becomes raised. The patient is not quite sure whether it becomes red. The interesting feature is that a fixed eruption first appeared after the use of silver arsphenamine and then flared up each time after the patient had received silver arsphenamine and mapharsen. I could not elicit a history of ingestion of any other drugs.

DR. FRED WISE: The histologic report on the chart states that no deposit of metal was found. If this eruption is due to arsenic, is it not necessary to demonstrate the presence of the metallic salt in the skin?

DR. MARION B. SULZBERGER: I wish to ask another question about this eruption. The fixed eruptions due to drugs, so far as I know, are frequently caused by chemicals which contain the cyclic benzene nucleus; that is, they are as a rule due to arsphenamine, phenolphthalein, antipyrine, acetophenetidin and similar compounds with a ring nucleus. I believe that fixed eruptions due to bismuth and the gold preparations reported in the literature may form exceptions to this rule. Are there fixed eruptions proved to be due to gold sodium thiosulfate (noncyclic)? And is it proved that the fixed eruptions following administration of bismuth are due to the metal and not to bismuth subsalicylate or some other cyclic compound? I wish to ask Dr. Abramowitz whether it has been proved in the literature that gold sodium thiosulfate and other noncyclic compounds can cause fixed eruptions. This is a matter of importance not only in relation to cutaneous eruptions but also in connection with granulocytopenia and thrombopenia.

DR. E. WILLIAM ABRAMOWITZ: So far as I have been able to find out, no one has as yet proved that fixed eruptions are due to compounds containing the benzene ring. The list of drugs that contain the benzene ring is extensive, and comparatively few drugs cause the fixed eruption. Besides, there is one report of a fixed eruption produced by inunctions of mercury and administration of mercuric chloride and mild mercurous chloride (all inorganic compounds), as well as merbaphen (a complex organic mercuric compound) (Hoffert, E.: Ueber fixes Quecksilber-Exanthem und durch Hautspannung bedingte Quecksilber-Ueberempfindlichkeit, *Arch. f. Dermat. u. Syph.* **147**:135, 1924). As to Dr. Wise's question, the term "fixed," according to Brocq, who introduced it, and to others, does not refer necessarily to the residual pigmentation that often appears but signifies the repeated relapses with a flare-up in previously affected areas of the skin. Accordingly, the eruption may be fixed even when evanescent, as in the urticarial type, provided the tendency to recurrence in the previously affected areas exists, irrespective of whether the pigmentation noted after the more inflammatory types appears or not. The pgimentation in the case of fixed eruptions due to drugs is due to formation of melanin, and the dopa reaction of involved tissue is positive. The pigmentation that follows the use of various metallic preparations appears insidiously and is more or less lasting, even if ingestion of drugs causing the pigmentation is discontinued. Metallic pigmentation, such as argyria, is due to an increased deposit of the metal or its compound in the skin and not to the formation of melanin. Metallic pigmentation may be accompanied or preceded by some form of dermatitis. There is, however, no sudden flare-up in the affected areas each time ingestion of the offending drug is resumed.

DR. A. BENSON CANNON: I think the location of the pigmentation is quite characteristic of an arsphenamine eruption. I have had the opportunity to observe several cases of a similar pigmentation; it occurred mostly after ingestion of silver arsphenamine. I have had a number of patients with this type of pigmentation affecting not only the skin but the mucous membranes of the mouth who had areas just as pigmented as those this woman exhibits. As a rule there has been no eruption primarily, except, of course, erythema, but this has been transient, and as soon as the erythema has disappeared the pigmentation has appeared and remained, persisting sometimes for many years. The areas generally affected are the anterior aspect of the neck, sometimes the angles of the mouth, the region surrounding the lips, the mucous membranes of the mouth, especially the hard palate, the axillae and the extensor surfaces of the arms.

DR. MAX SCHEER: I did not know that the location of the pigmentation made any difference. One of the first eruptions due to phenolphthalein which I observed, many years ago, was in a girl who had been using ex-lax. She had pigmentation around the mouth, much like that exhibited by Dr. Vero's patient. That was the only location, as I remember. I should think that this pigmentation could occur on any part of the body, no matter what drug caused it, so long as it is a drug which can produce a fixed eruption.

DR. A. BENSON CANNON: I think that is true, but the fact remains that these eruptions generally affect the flexor surfaces. Arsphenamine dermatitis usually begins in the armpits, flexures of the elbows and backs of the knees and is not infrequently localized there until the next injection of arsphenamine is given. Then the entire cutaneous surface becomes involved.

DR. LEO SPIEGEL: In the cases of argyria following the use of silver arsphenamine which I reported (ARCH. DERMAT & SYPH. **23**:266 [Feb.] 1931), there was no preceding erythema. The mucous membranes show the deposit earlier than the skin, in the form of a bluish black discoloration; the skin subsequently becomes ashen colored, and the involvement is most evident on the exposed parts. The deposit of silver in the skin is generalized. I believe that in this case the fixed eruption is due to arsenic. There is no evidence of discoloration on the mucous membranes. In my cases the biopsy specimens taken from the buccal mucous membrane showed no inflammatory reaction. The particles of silver can be demonstrated by means of a dark field apparatus, and the metal can be found by spectroscopic and chemical examination if enough cutaneous tissue is removed.

DR. FRANK C. COMBES: The discussion seems to be getting away from the case under consideration. It was not presented as an instance of a fixed eruption due to arsenic or due to silver but as one of a fixed eruption in a patient taking arsphenamine. In fixed eruptions due to arsphenamine arsenic is not found in the skin. Melanin is responsible for the pigmentation in the lesions, as in the fixed eruptions due to phenolphthalein. The question about the effect of the benzene ring was answered by Dr. Abramowitz.

DR. EUGENE TRAUGOTT BERNSTEIN: In 1923 I presented in Frankfort, Germany, a patient with generalized argyria. Hoffman and other dermatologists who had great experience in treating patients with silver arsphenamine were present at that meeting. They were asked whether they had observed cases of argyria produced by silver arsphenamine. All the members agreed that argyria due to silver arsphenamine occurred in very few cases and that it was always generalized.

DR. FRANK VERO: My co-workers and I have had this patient under observation for some time, and we are convinced that she has a fixed eruption. She never had any dermatitis after administration of neoarsphenamine, but she had a severe immediate reaction after the injection, and treatment with neoarsphenamine was discontinued. The pigmentary lesions appeared after the third injection when treatment with silver arsphenamine was given. That treatment was continued, and the pigmentations became more marked, so that administration of silver arsphenamine was also discontinued. In the interim she received treatment with

a bismuth preparation, and the pigmentation faded to some extent, but it reappeared after injections of silver arsphenamine were given.

Because of discussion in the clinic about the possibility of argyria a biopsy was made and the specimen was examined for silver, but the special stains made with potassium ferrocyanide showed no positive evidence of any metallic deposits in the skin. Recently we have considered this fixed eruption as due to arsenic rather than to silver arsphenamine because after the patient received mapharsen she showed a flare-up and new pigmentary lesions developed. It is known that once a patient is sensitized to one drug other drugs may produce similar cutaneous reactions.

PSORIASIFORM SYPHILIS. Presented by DR. ANDREW H. MONTGOMERY for DR. R. J. MCDONALD.

F. McD., a man aged 35, a silk worker, from the service of Dr. F. H. Dillingham at the Polyclinic Hospital, had a penile sore on Nov. 8, 1933. This was followed by profuse lesions of secondary syphilis, which disappeared as a result of treatment. Later bilateral nodules and serpiginous and arciform patches with a marked tendency to ulcerate appeared on the arms. In spite of intensive treatment, consisting of 75 injections of 0.6 Gm. of neoarsphenamine, over a hundred injections of mercury and bismuth preparations and treatment with nonspecific protein and potassium iodide little result has been attained either in affecting the serologic reaction or in alleviating the cutaneous manifestations. Cessation of antisyphilitic treatment is followed by recurrences.

At present there are rather bright red, scaly and crusted, discrete and confluent patches with configurations on the left shoulder, arm, elbow and forearm, on the right forearm and wrist, on the lips, especially on the lower lip, on the scalp and on the tip of the glans penis. On the inner side of the thighs are numerous minute patches covered with scales.

Ulceration and superficial scarring have been a feature of the eruption. Extensive sharply limited circinate scars cover the wrists and parts of the forearms and are present also on the legs and on the scrotum. There is a healing ulcer on the right wrist. Two months ago there was active ulceration in that location as well as on the left elbow and on the scrotum. Patches on the right wrist arise in an area previously scarred.

There is no history of any cutaneous eruption before the appearance of the lesions of secondary syphilis at the end of 1933.

DISCUSSION

DR. FRANK C. COMBES: A few of the lesions undoubtedly present scaling suggestive of psoriasis, but the eruption does not conform in any way to my impression of a psoriasiform syphiloderm. Psoriasiform syphilis is a manifestation of secondary, usually of a late stage of secondary syphilis. This eruption occurred late in the disease. Clinically there are considerable atrophy and scarring. These should not result from the classic psoriasiform syphilis, which, as I said before, is an eruption of secondary syphilis. I suggest a diagnosis of tertiary serpiginous nodular syphilis, rather widely distributed and superficial.

DR. ISADORE ROSEN: It is interesting to compare this patient's disorder with that exhibited by the patient presented last month by Dr. Chargin (ARCH. DERMAT. & SYPH. **34**:1046 [Dec.] 1936). In both instances active lesions developed during treatment. The question arises whether the treatment was properly administered early in the infection. Often in cases of resistant syphilis there is a history of irregular and inadequate treatment in early stages of the disease. This may be partially responsible for the later refractoriness of the disease.

The most interesting feature in Dr. Chargin's case was the repeated negative Wassermann reaction in the face of active manifestations, the reaction becoming positive later when further treatment was given.

DR. PAUL E. BECHET: I think that all the members agree that there is absolutely no relation between psoriasis and syphilis. I object, therefore, to the term psoriasiform syphilis. I should rather call the disorder syphilis resembling psoriasis. It is of course a frank syphiloderm, but it does markedly resemble psoriasis.

DR. ANDREW H. MONTGOMERY: It is perfectly clear, of course, that the disorder is syphilis, but it resembles psoriasis also. The unusual feature is the psoriasiform lesions appearing within a previously scarred area; this is common in psoriasis but in my experience is unusual in syphilis.

A CASE FOR DIAGNOSIS (IODODERMA? PEMPHIGUS?). Presented by DR. ANDREW H. MONTGOMERY.

H. V., a man aged 61, an actor, from the service of Dr. Dillingham at the Polyclinic Hospital was referred from the department of rhinolaryngology on Feb. 13, 1936, because of a recent vesicobullous eruption on the face, chest and back.

For more than ten years he has had recurrent more or less extensive superficial and deep buccal and pharyngeal ulcerations. For these he has been examined and treated by private physicians and in clinics all over the United States. Examinations for infection with Vincent's bacillus have invariably given negative results. Wassermann tests also have been negative. Repeated search for dermatologic lesions also has been fruitless. Except for these recurrent ulcerations and a mild arthritis, the medical history is irrelevant.

About Feb. 7, 1936, vesicular lesions appeared on the left cheek and over the left ribs. These were followed by numerous discrete blebs of various sizes involving only the anterior and posterior surfaces of the upper portion of the trunk and scattered similar lesions about the head. Several new tense bullae appeared in these areas during the first week the patient was under observation. They arose from normal skin with no inflammatory areola. Later they became turbid, serosanguineous and flaccid, drying down and becoming crusted on an erythematous base. There has been no grouping of lesions. No other type of lesion has appeared. Itching is not a feature. Signs of erythema iris, dermographia and the Nikolsky sign are absent.

Ten years ago, after the first involvement of the throat, on the basis of a clinical diagnosis of infection with Vincent's bacillus, the patient took 1 ounce (29 cc.) of "Burnham's soluble iodine." There were no cutaneous lesions. Seven or eight months ago he began taking 15 grains (0.975 Gm.) of potassium iodide in milk three times a day for arthritis. He took the drug for three weeks and discontinued taking it for three weeks.

On Feb. 13, 1936, the Wassermann reaction was negative. Examination of the blood showed 4,750,000 red cells; 9,000 white cells and 90 per cent hemoglobin. The differential count showed 63 per cent polymorphonuclear leukocytes, 36 per cent lymphocytes and 1 per cent eosinophils.

Patch tests with iodides gave negative results after twenty-four hours.

DISCUSSION

DR. FRED WISE: Of the two diagnoses offered, I should certainly be inclined to support that of pemphigus. The patient has a severely ulcerated lesion in the mouth, and the duration of the small lesions on the back, if I remember correctly, is ten years. I believe that the disorder is so-called benign pemphigus, but at any moment it is liable to change to pemphigus vulgaris.

DR. ANDREW H. MONTGOMERY: My co-workers and I considered the diagnosis of Senear-Usher syndrome at the beginning but discarded that diagnosis on account of the lack of resemblance of the lesions to those of lupus erythematosus. They started as blebs and bullae and went through the ordinary drying-out process of pemphigus. We believe that the potassium iodide precipitated the invasion of the skin.

A CASE FOR DIAGNOSIS (DERMATITIS HERPETIFORMIS? BROMODERMA?). Presented by DR. MARION B. SULZBERGER for DR. G. RUBIN.

Mrs. B., a woman aged 47, is presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital because of a polycyclic, pustular and bullous eruption on the dorsum of the right hand of six weeks' duration. For two weeks before the eruption appeared the patient had been taking neurosine (a proprietary hypnotic and anodyne containing a considerable amount of bromides). When the eruption on the right hand broke out she stopped taking the medicine. The eruption has improved as a result of local treatment.

Patch tests with a 50 per cent ointment of potassium iodide elicited a plus-minus reaction; those with potassium bromide and sodium bromide gave negative results.

DISCUSSION

DR. HERMANN FEIT: To me this looks like a banal infection. I cannot see how any one can make a diagnosis of localized dermatitis herpetiformis.

DR. DAVID BLOOM: I wish to suggest a third diagnosis, namely, localized pyoderma. The limited localization may be explained by hypersensitivity confined to the involved areas. The disorder is analogous to ulcerative or gangrenous pyoderma, described frequently in the literature, which may also be limited to a certain part of the body.

DR. FRED WISE: I saw this patient on several occasions, and I think that it is impossible to make a definite diagnosis. The reason Dr. Sulzberger mentioned a drug eruption is that the patient states that she took neurosine. Dr. Bloom's suggestion of pyoderma is not correct. The primary lesion was clear and bullous; pus is only secondary; that complicates the picture. Again I say that a disorder of this type has to be watched and studied further.

DR. MARION B. SULZBERGER: Both the diagnoses presented are questioned. I wish to call attention to the fact that this woman had never had any eruption and that the lesions appeared two weeks after she began to take bromides. The eruption which she presents tonight has an appearance somewhat different from that exhibited at other times at which my co-workers and I have seen the patient. There is a circinate, sharply circumscribed pustulovesicular eruption on the dorsum of one hand, spreading irregularly over the surface. I think that the diagnosis of dermatitis herpetiformis would have occurred to any one who saw a lesion of this kind on any other part of the body, for instance over the sacral area. Isolated lesions of dermatitis herpetiformis are not excessively rare. They have been described many times in Europe as a localized single lesion occurring for instance on the fingers, and they are sometimes called "benign localized pemphigus." Such disorders were recently described by Frei. It is also known that a breaking out of such an eruption may follow the ingestion of bromides or iodides. I have seen cases in which typical dermatitis herpetiformis followed ingestion of bromide or iodide and ceased after the halogen was no longer taken. And in one case which I observed a pustular dermatosis consisting of minute pustules confined to the fingers and palms and resembling a pustular id was proved to be due to bromides.

In this case the eruption has improved since the patient stopped taking the bromides, and there have been no new bullae. We thought it would be worth while, however, to present this patient just because the disorder is not an ordinary eruption due to bromide on the dorsa of the hands or an ordinary eczematous process. Dermatitis herpetiformis or eruptions due to iodide and bromide confined to the hands are worthy of consideration, for there is a great danger of confusing such conditions with eczema, dermatophytids or even pustular psoriasis or Hallopeau's disease and other dermatoses which occur much more frequently on the hands alone.

A Case for Diagnosis (Dermatitis Herpetiformis?). Presented by Dr. Harry C. Saunders.

C. B., a man aged 30, is presented from the French Hospital because of an eruption on the forehead, back, shoulders and forearms of from three to four weeks' duration. On Jan. 29, 1936, the patient presented numerous wheals over the aforementioned areas. A diagnosis of urticaria was made. On February 12, there were two large erythematovesicular rings on the forehead. On the other locations there were numerous groups of lesions. Each group consisted of erythema, vesicles and pea-sized papules, which were rather deeply seated. On March 2, the picture had changed entirely. The eruption consisted of erythematous patches with some edematous papules and slight scaling. In the nasolabial fold there was an erythematous patch with a greasy scale.

Various cutaneous tests were made, a positive reaction being obtained with mercury bichloride in 1:1,000 solution, copper chloride in 1 per cent solution and a 5 per cent solution of sudan III in mineral oil. On Feb. 17, 1936, the Wassermann reaction was negative.

Treatment consisted of the use of calamine and zinc oxide lotion with 0.25 per cent menthol locally and tincture of belladonna internally, which caused no improvement; two injections of the patient's own blood have resulted in marked improvement.

DISCUSSION

Dr. Eugene Traugott Bernstein: I wish to make a tentative diagnosis of erythema annulare, a secondary toxic eruption following the lines of cleavage of the trunk.

Dr. A. Benson Cannon: While one might think of allergic dermatitis at first glance, I believe the eruption is more characteristic of dermatitis herpetiformis. The location and appearance of the lesions on the extensor surfaces, the grouping, the polymorphous character and the intense itching suggest that diagnosis. I feel that only the chronicity and the scarring are lacking to establish the diagnosis of typical dermatitis herpetiformis.

Dr. Max Scheer: Apropos of Dr. Cannon's remarks, Dr. Sulzberger and I saw a patient at a meeting of the Philadelphia Dermatological Society a week ago who presented lesions like those exhibited by Dr. Saunder's patient and in a further stage had vesicles and bullae. The diagnosis was definitely dermatitis herpetiformis.

A Case for Diagnosis (Pityriasis Rosea? Dermatitis Herpetiformis? Dermatophytid?). Presented by Dr. Paul E. Bechet.

D. C., a man aged 19, is presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital because of an eruption which has been present on the neck for one month and on the body for two months. At this time there is slight evidence of dermatophytosis between the toes. There are two marginated vesicular lesions on the neck and on the ankles. On the trunk there are a number of pale yellowish, rather sharply outlined lesions. Other lesions are much more inflamed, exhibiting a halo of vesicles around the periphery.

DISCUSSION

Dr. Fred Wise: This is another disorder difficult to diagnose. I wish to draw attention briefly to some of the lesions this patient shows. On the right side of the neck he has an oblong distinctly eczematous well defined lesion which looks like an artefact. There are lesions on the extensor surfaces of both elbows which are eczematous. In addition, he has a macular and maculosquamous eruption with some pigmentation on the trunk. I think these lesions are different from those I have already referred to. In all probability he has two different cutaneous diseases, neither of which I can identify.

DR. PAUL E. BECHET: I was hoping for discussion. That was my reason for presenting the patient. I saw him for the first time within twenty-four hours, and of course no laboratory reports have as yet been received. Dr. Wise has described the lesions accurately, except possibly those on the trunk. On the upper portion of the back the patient has lesions almost typical of pityriasis rosea, which are fading. The lesions on the lower portion of the back and on the buttocks, however, seem to be made up of fine aggregated vesicles forming patches with clear centers, and where he has scratched he has excoriated the vesicular lesions. With this additional explanation, I agree with Dr. Wise that it is impossible to make a positive diagnosis without further study. However, in my opinion, it is well worth while to report such a case occasionally, as that tends to stimulate clinical acuity which elaborate laboratory reports so frequently tend to dull.

A CASE FOR DIAGNOSIS (DERMATOPHYTOSIS? PUSTULAR PSORIASIS?). Presented by DR. GEORGE M. LEWIS.

E. H., a man aged 48, is presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital because of an eruption of the palms and soles of ten years' duration. The soles show diffuse erythema, scaling and a few deep-seated vesicles. The palms show a similar condition. The eruption is worse in the summer.

Examination and cultures of material from the hands and feet for tinea gave negative results. Intradermal tests with trichophytin and with catarrhal vaccine in 1:10 dilution gave negative reactions; those with oidiomycin gave a plus-minus reaction. Patch tests with the leather from inside the shoe gave negative results.

Biopsy showed changes in the epidermis and reactions in the cutis like those found in pustular psoriasis, but the section examined did not show pustules.

DISCUSSION

DR. ANTHONY C. CIPOLLARO: I think that this is a typical case of what Barber describes as pustular psoriasis. The eruption has all the features of that condition. It runs a chronic course; although the lesions improve, they never disappear no matter what form of therapy is used. It is symmetrical, involving both feet and both hands. Fungi have not been found, and tests with trichophytin and oidiomycin have given negative results. The primary lesion is a flat pustule. These pustules have been referred to as "lakes of pus." The pus is sterile; neither pyogenic organisms nor fungi have been found. The disorder shows all these characteristic features of pustular psoriasis.

DR. GEORGE M. LEWIS: The disease is now in the quiescent stage; I have seen marked pustulation in the areas which are now affected, with little tendency to peripheral extension. It is the opinion of many observers that the diagnosis of psoriasis should not be made unless typical lesions of psoriasis are present elsewhere. This brings up the debated point as to whether the disorder is psoriasis or a different entity and whether pustular psoriasis is in reality psoriasis. Pustular psoriasis is at least a handy name to label chronic and rebellious eruptions which have a typical pathologic picture. In this instance the granular layer is retained, alternating with parakeratosis; there is no spongiosis, and a moderate degree of reaction in the upper portion of the cutis is present. This fits in with the pathologic picture of the disorder known as pustular psoriasis. This man has diseased tonsils which will be removed.

A CASE FOR DIAGNOSIS (CUTIS VERTICIS GYRATA?). Presented by DR. MAX SCHEER.

R. K., a woman aged 49, is presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital because of a condition

which has been present on the scalp for three years and on the back of the scalp for five years. The patient presents three distinct transverse furrows. The major furrow at the level of the occipital prominence is about 3 inches (7 cm.) wide and quite deep. The two minor furrows are situated ½ inch (1.2 cm.) above; they are less deep and are only about 1½ inches (3.7 cm.) wide. These transverse furrows throw the affected portion of the scalp into gyrations. A dollar-sized patch of dry, scaly erythematous dermatitis accompanied by almost complete alopecia is located beneath the deep furrows. A moderate degree of alopecia is also present in the regions of the furrows. Except for some strabismus, physical examination gave essentially negative results. The Wassermann and the Kahn reaction were also negative.

DISCUSSION

DR. FRED WISE: The disorder does not appear to me to be cutis verticis gyrata. There is nothing gyrate about it. It is a deep infiltration in the back of the scalp with grooves in the skin. I do not think that it corresponds to the condition described as cutis verticis gyrata.

DR. MARION SULZBERGER: I agree entirely with Dr. Wise. I think that the lesions in this case are certainly not gyrate and that many of the other manifestations of cutis verticis gyrata are missing. This skin is not loose and cannot be lifted from the underlying structures. The folded skin in cutis verticis gyrata is usually loose. This woman simply presents three deep transverse fissures. I agree with Dr. Wise that they are due to chronic inflammation and brawny infiltration of the skin which accentuate the transverse folds found normally at the back of the neck.

DR. EUGENE F. TRAUB: I think the difficulty which arises in the literature about this disorder is due to the fact that two forms are described. The first is a nevus and represents the true type of this disease. The second form does not really belong under this heading at all but consists of a chronic inflammatory process or some other disease, either malignant or lymphoblastic, which simulates in a measure the folds of true cutis verticis gyrata. Unfortunately both forms of the disease have been listed under the same heading and are now described in this way in most of the textbooks so that by common usage the second form with reservations has come to be recognized as a variety of this disease.

LYMPHOGRANULOMA VENEREUM. Presented by DR. A. BENSON CANNON.

M. G., a Negress aged 28, a houseworker, is presented from the City Hospital. She has had lymphogranuloma venereum for the past sixteen years. Donovan bodies were demonstrated in 1929. At first the lesion was pea sized and confined to one labium. It responded to treatment with antimony and potassium tartrate, and the patient was dismissed in one month as cured. She has remained free from lesions for from six months to one and one-half years; at intervals since then lesions have recurred, and at each hospitalization the condition took longer to cure than at the previous admission. In 1929 an excision of one labium was performed. Later other areas were excised until a complete vulvectomy had been performed. Administration of antimony and potassium tartrate has been the chief form of therapy.

At present the involved area is covered with a firm, hard nodular granulomatous process suggestive of carcinomatous change. A biopsy made at the Vanderbilt Clinic showed no evidence of carcinoma. In addition to the changes in the skin there is a constriction of the vaginal, anal and urethral orifices. Treatment since the last admission has consisted of six injections of antimony thioglycollate in doses of from 3 to 9 cc., at three day intervals; both clinical and symptomatic improvement have resulted.

In September 1935 a diagnosis of tuberculosis of the lumbar portion of the spine was made at the Vanderbilt Clinic. Roentgenograms of the chest revealed

no evidence of tuberculosis; those of the lumbar portion of the spine showed destructive processes of the fourth and fifth vertebrae with scoliosis of the lumbar vertebrae to the left.

FOLLICULITIS SYCOSIFORMIS ATROPHICANS (SYCOSIS LUPOIDES). Presented by DR. DAVID BLOOM.

Y. J., a man aged 27, born in the United States, is presented from the Jewish Memorial Hospital because of an eruption of five years' duration. The disorder started with a crusted papulopustular eruption on the chin and spread slowly to the upper lip and cheeks. The skin under the lower lip and on the upper lip was at that time markedly infiltrated, erythematous, fissured and oozing, and the patient had difficulty in moving his lips unless they were softened with grease. Two and one-half years later the eruption disappeared, leaving alopecia of the bearded region. One and one-half years after the onset of the illness the same process started symmetrically at the temporal regions and gradually extended upward to the parietal region, forward to the frontal region and backward to the occipital region, resulting in a band of alopecia encircling the hairy portion of the scalp. Six months ago the patient noticed lesions in the hairy portion of the scalp which have persisted. The same process occurred in the eyebrows, eyelashes, and pubic region. One and one-half years ago the hairs in the eyebrows began to grow again.

The bearded region shows a thin growth of hairs with round areas of alopecia but no scarring. The eyebrows show alopecia in the center and a few hairs at the periphery. The eyelashes have only a few hairs and are inflamed. Encircling the scalp there is a broad band of bald skin, which is shiny, white and atrophic. This zone is followed by a band from 2 to 3 cm. wide which shows partial alopecia and atrophy and is covered with numerous follicular pustules. The rest of the scalp is covered with hairs and contains numerous pea-sized indurated papules and larger indurated boggy nodules covered by skin devoid of hair. From the umbilicus to the pubic region there is a wide band of alopecia from 2 to 3 inches (5 to 7 cm.) in width which involves also the pubis and the groins. There are no hairs on the legs. Numerous pea-sized superficial scars cover the thighs and the legs. The axillae show a few follicular pustules but no alopecia.

A pure culture of Staphylococcus aureus was obtained from a fresh pustule from the scalp. Biopsy was made on material from the area of alopecia and from a follicular pustule of the scalp.

About a year ago the patient received from a competent dermatologist two series of roentgen treatments, consisting of five weekly exposures of three areas of the scalp to one eighth of a skin unit of radiation. During this treatment the areas of alopecia were shielded and only the hairy portion of the scalp was exposed.

The previous and the family history are irrelevant.

LYMPHOGRANULOMA VENEREUM IN A PATIENT WITH SECONDARY SYPHILIS. Presented by DR. HARRY C. SAUNDERS.

A. H., a Negro aged 24, is presented from the Bellevue Hospital because of an eruption on the left buttock of two months' duration. There is a lesion about 6 cm. in diameter, slightly raised. The surface of the lesion is flat. The granulating base is bathed in a seropurulent discharge. There were several outlying smaller lesions, which have disappeared, and the large lesion has grown smaller as a result of antisyphilitic treatment. A diagnosis of condyloma latum has been made. Further treatment has brought about no additional improvement.

On Jan. 1, 1936, the Wassermann reaction of the blood was 2 plus; on Jan. 9 it was 2 plus; on Feb. 2 it was 4 plus. Examination of twelve smears for Donovan bodies has given positive results.

The patient has received seven injections of mercury and seven of neoarsphenamine.

LOS ANGELES DERMATOLOGICAL SOCIETY

THOMAS W. NISBET, M.D., *Secretary*

March 9, 1936

NELSON PAUL ANDERSON, M.D., *Chairman*

LARGE-SPORED RINGWORM OF THE SCALP. Presented by DR. NELSON PAUL ANDERSON.

N. D., a boy aged 8 years, has had this condition for five years. No other member of the family is affected. The patient was first seen at the Yale Street clinic in November 1932, and at that time the eruption was said to have been present for two or three years. There is widespread diffuse scaling in the scalp, and numerous small but scattered areas of atrophic alopecia are present. When the hair is clipped close one can see numerous small black dots. These apparently are small, broken-off hairs covered with a thin layer of skin. Histologic examination of removed hairs revealed numerous large spores of an endo-ectothrix type. Culture on Sabouraud's medium showed Trichophyton acuminatum.

DISCUSSION

DR. C. R. HALLORAN: If a microscopic study revealed spores the disorder is tinea of the scalp. Clinically the condition resembles favus, though I could make out no scutula.

DR. H. P. JACOBSON: I agree with the diagnosis. The clinical picture alone is sufficient to establish a diagnosis, and the microscopic picture certainly confirms the clinical diagnosis. The only unusual feature is the amount of glandular involvement. The cervical glands on both sides of the neck are markedly enlarged. I think it would be worth while to aspirate one of these glands and examine the aspirated fluid for the fungi.

DR. NELSON PAUL ANDERSON: I thought this case interesting (1) because the large spore type of ringworm is rarely seen; (2) because there are numerous areas of alopecia with atrophy, and (3) because, in my opinion, this type of ringworm does not respond to local treatment even when it is continued for many years. I think that roentgen epilation is the only measure that will bring about a cure.

A CASE FOR DIAGNOSIS (PYODERMA? EPIDERMOLYSIS BULLOSA?). Presented by DR. WILLIAM H. GOECKERMAN and DR. L. F. X. WILHELM.

ROSACEA-LIKE TUBERCULID OF LEWANDOWSKY. Presented by DR. NELSON PAUL ANDERSON.

R. H., a woman, states that her father, one brother and one sister died of pulmonary tuberculosis. The past history is irrelevant. The patient was first seen on Jan. 3, 1936, presenting an eruption on the face of three weeks' duration. There were a marked but discrete papular eruption and an eruption of small vesicules involving practically all the center of the face. The forehead was also involved but to a much less degree. A diagnosis of dermatitis venenata was made, but patch tests with all the cosmetics the patient uses gave negative results; there was, however, a rapid and striking improvement after one dose of roentgen irradiation and application of a soothing lotion. About ten days later the eruption recurred but was more severe; several small pustules were present. In the pus from these several demodices were found, and the patient was told to apply a sulfur ointment for three nights. The note was made on the record one week later (Jan. 20, 1936) that in places the eruption had the pinkish and pinkish yellow appearance of a

rosaceous tuberculid of Lewandowsky. An intradermal test with a 1:100 dilution of tuberculin made on Feb. 7, 1936, gave a 3 plus reaction, the lesion being about the size of a dime. On Feb. 14, 1936, treatment consisting of intravenous injections of gold and sodium thiosulfate was started, and to date the patient has received four injections of 5, 10 and 15 mg. of that drug. There has been considerable improvement. A photograph of the patient taken on Feb. 14, 1936, is presented.

DISCUSSION

DR. WILLIAM H. GOECKERMAN: I am more inclined to the diagnosis of acne rosacea. Flare-ups occur after nervous excitement. The patient gives a definite history of pustulation. Of course, the picture today is somewhat improved.

DR. L. F. X. WILHELM: I should be inclined to regard the condition as acne rosacea owing to the fact that the patient is past 30 and that flare-ups occur after nervous excitement.

DR. H. S. CAMPBELL: I believe the disorder is acne rosacea.

DR. IRVING R. BANCROFT: I believe it is a peculiar form of acne rosacea.

DR. H. P. JACOBSON: I agree with the diagnosis as presented. The morphologic picture certainly differs markedly from that usually observed in acne rosacea in the papulopustular stage. The lesions which the patient exhibits tonight are for the most part discrete and nodular and located on rather dry and nonseborrheic skin. The involvement of the forehead is much more extensive than that commonly present in cases of simple acne rosacea.

DR. MOSES SCHOLTZ: I think the disorder is suggestive of the Lewandowsky type of tuberculid.

DR. SAMUEL AYRES JR.: I think it is definitely the Lewandowsky type of tuberculid. The lesions are more on the sides of the face than in true acne rosacea. They have the peculiar, almost apple jelly quality seen in tuberculids. At first glance one would call the disorder acne rosacea, but on more thorough examination, especially in view of the fact that improvement resulted from administration of gold and sodium thiosulfate, I believe the disorder is the Lewandowsky type of tuberculid.

DR. SAUL S. ROBINSON: I agree with the diagnosis. I have a patient with a rosacea-like tuberculid proved by biopsy. She has shown exacerbations after ingestion of certain types of food. My patient's condition also has responded to gold and sodium thiosulfate; it is practically cleared.

DR. F. I. BALL: In view of the improvement which has taken place in this case, I believe that it is difficult to make a definite diagnosis. But the character of the apple jelly papular lesions disseminated over the face, the positive reaction to the 1:1,000,000 dilution of tuberculin and the evident improvement as a result of treatment with gold and sodium thiosulfate point to Lewandowsky's tuberculid.

DR. NELSON PAUL ANDERSON: Three members of the patient's family have died of tuberculosis, which means in my opinion that this person is definitely infected. The first diagnosis made when she had had the eruption only three weeks was contact dermatitis. She improved when a soothing lotion was applied, but ten days later the eruption recurred and was worse than before. In a good light one can see a tremendous number of sago-like, yellowish pink nodules level with the skin. I do not associate intracutaneous flat nodules with the ordinary type of acne rosacea. Furthermore, the nose is practically free, and that is usually one of the areas markedly involved by acne rosacea.

LICHEN ACUMINATUS; LICHEN PLANUS; LICHENOID ECZEMA. Presented by DR. MOSES SCHOLTZ.

S. G., a woman, has an irrelevant family history and has had no serious illnesses. Itching and an eruption have been present for the last six months. The general appearance is that of an undernourished neurotic person. There are

discrete well defined linear lichenoid waxy-looking infiltrated patches in the axilla and discrete acuminate inflammatory eczematoid patches on the sides of the vulva and descending toward the perineum.

DISCUSSION

DR. IRVING R. BANCROFT: It seems to me the lesions under the arm are in an unusual place for a lichen. One thing I thought of was a spontaneous keloid.

DR. H. C. L. LINDSAY: The lesions on the arm look like lichen, but the axillae are an unusual location for lichen, and the lesions are in parallel lines.

DR. H. S. CAMPBELL: I believe this condition is merely a different secondary manifestation following repeated attacks of dermatitis. There is a definite history of allergy. The axillae manifest multiple small keloids. The lesions on the arms demonstrate simply varying degrees of lichenification.

DR. KENDAL FROST: The lesions on the wrist are, in my opinion, lichen acuminatus, while those on the hand and the larger nodular lesions in the axilla are lichen planus.

DR. C. R. HALLORAN: The clinical picture is that of lichen planus and lichen acuminatus. The lesions in the axilla, although of rare type, are also lesions of lichen planus.

DR. L. F. X. WILHELM: I agree with the diagnosis.

DR. SAUL S. ROBINSON: I believe that the disorder is lichen planus and that the lichen planus in the axillae is a moniliform type. There is linear formation.

DR. SAMUEL AYRES JR.: I agree with Dr. Robinson. I think all the lesions are lichen planus with slight variations in the clinical appearance.

DR. KENDAL FROST: I agree with Dr. Scholtz. All these lesions represent different expressions of the same disease, but since different morphologic types are described, it seems wise to continue to observe these differences. This does not interfere with a broad conception of the disorder in which varying types of lesions can be present. A case like this in which different types of lesions are present simultaneously merely adds weight to the conception that the same factor can produce morphologically different cutaneous lesions.

CHEILITIS GLANDULARIS SEROSA. Presented by DR. MOSES SCHOLTZ.

A. R., a man whose family history is irrelevant, was treated by me for epithelioma on the center of the lower lip with cautery and radium. There is a healthy scar. For several months he has complained of excessive moisture on the lower lip. The patient's general appearance is that of a healthy, strong man. There are numerous discrete drops of serous discharge on the lower lip; these are more visible on pressure. The general appearance and the consistency of the lip are normal.

DISCUSSION

DR. SAMUEL AYRES JR.: I do not know whether there is any relation between the two, but this patient's condition reminds me of an identical disorder I have observed recently. After treatment with radium the same oozing of mucus on the lip was noted, but it did not appear on the irradiated portion. I do not know whether it was present before the epithelioma was removed, but it is rather interesting to know of this case right after having observed one of my own.

DR. SAUL S. ROBINSON: I believe the condition is cheilitis glandularis.

DR. WILLIAM H. GOECKERMAN: I should be glad to subscribe to the diagnosis, but I do not know what the significance is.

DR. KENDAL FROST: I agree with the diagnosis. I had a patient with a similar condition on the lip some time ago. It was not complicated by epithelioma,

and the patient had received a course of roentgen treatment before I saw him; that had temporarily alleviated the condition, but it recurred. I gave him some further roentgen treatment with the same result. Applications of carbon dioxide snow were of some value, but the condition was not entirely eradicated the last time I saw him.

DR. H. P. JACOBSON: This is an interesting case. If I understood Dr. Scholtz correctly, the patient was first treated for epithelioma by means of cauterization, and this was followed by the radium therapy. After treatment with radium the present condition developed. I wonder if it is not possible that the present complaint is largely due to the action of the radium on particularly sensitive mucous glands. This thought just occurred to me as a possibility, and in the light of knowledge regarding radiosensitivity generally, I believe that this possibility deserves consideration. The objection of Dr. Scholtz, namely, that the present lesions could not possibly be an expression of radiosensitivity because the area originally treated with the cautery does not show any involvement, I believe, could well be used in support of the thought just expressed. The glands and the ducts in the treated area have been destroyed by the cautery and the radium and therefore are not present to show evidence of overstimulation by the radium, whereas the glands in the surrounding areas, which have not been destroyed by treatment but which did receive the effect of distant radiation, have been overstimulated and are reacting accordingly. The best treatment seems to be surgical excision.

DR. MOSES SCHOLTZ: I believe there is no connection between the radium therapy and these cystic lesions. In the first place, the epithelioma was in the middle of the lip and the radium did not touch the site of the cystic lesions. The radium should cause atrophy of the glands and not stimulate their function. Lesions of glandular cheilitis are crusty. As to treatment I believe that the best thing is administration of fractional doses of roentgen radiation, such as are used on sebaceous glands in cases of acne. As to distance radiation, one does not expect radium to act sideways.

DR. WILLIAM H. GOECKERMAN: Dr. Jacobson mentioned excision of the lip. For more than fifteen years my co-workers and I have made it a practice to excise the mucous lining of the lip, and in a large percentage of cases we had satisfactory results when the disorder had proved resistant to roentgen and radium therapy and even to mild destructive measures. It is not a new method, and it can be used rather satisfactorily when simpler measures have failed.

DR. H. C. L. LINDSAY: Dr. Stokes recommends roentgen treatment, and I have tried it for many years with success.

A CASE FOR DIAGNOSIS (LUPUS MILIARIS DISSEMINATUS FACIEI? LUPUS VULGARIS?). Presented by DR. SAMUEL AYRES JR.

O. S., a nurse aged 38, whose family history is irrelevant has had an aching pain in the chest for several months. The present illness began four months ago, several small pinhead-sized nodules appearing on the chin; other similar lesions have developed. The general appearance is good. Scattered over the right cheek and right side of the chin and on the cutaneous aspect of the upper lip are about six discrete yellowish-pink cystlike nodules from the size of a pinhead to that of a split pea which on pressure with the diascope suggest apple jelly nodules. Roentgenograms of the chest showed no evidence of tuberculosis. The Mantoux test gave a 4 plus reaction; the site was still red and swollen eight days after the test was made. Biopsy showed tubercles with epithelial cells and giant cells characteristic of tuberculosis. Many sections were examined, but no coccidioides were found. Stains for acid-fast organisms gave negative results.

DISCUSSION

DR. SAUL S. ROBINSON: I agree with the diagnosis of lupus miliaris faciei. I believe the biopsy showed a tuberculoid structure.

DR. WILLIAM H. GOECKERMAN: I think the diagnosis of lupus miliaris faciei disseminatus is correct. I am not much inclined to accept that of lupus vulgaris. I was wondering whether there was much reaction in those lesions when the tuberculin test was made.

DR. SAMUEL AYRES JR.: In answer to Dr. Goeckerman's question I wish to state that I do not recall any focal flare-up. This case is interesting because of the extreme rarity of the lupus vulgaris type of eruption in Southern California. One occasionally sees the tuberculosis verrucosa cutis type, but I do not believe that I have ever seen the lupus vulgaris type actually develop in a patient living in Southern California. I have prescribed a modified Gerson diet, therapy with a gold compound and local application of small doses of roentgen radiation. I should appreciate suggestions as to therapy.

THOMAS W. NISBET, M.D., *Secretary*

April 14, 1936

NELSON PAUL ANDERSON, M.D., *Chairman*

A CASE FOR DISCUSSION. Presented by DR. H. S. CAMPBELL.

Mrs. L. L. received 10 skin units of unfiltered roentgen radiation to an epithelioma the size of a walnut which was fungating. The lesion had been present for twelve years. In the last few weeks before treatment it had shown rapid "raised raw meat growth." Roentgen treatment was given on Jan. 23, 1936. Involution was complete by March 24, 1936.

DISCUSSION

DR. C. R. ANDERSON: Dr. Campbell presented this patient to stimulate discussion as to treatment of epithelioma with a massive dose of roentgen radiation.

DR. C. R. HALLORAN: I believe that massive doses of roentgen radiation may be followed several months or a few years later by untoward sequelae. Equally good or better results may be obtained by the combination of electrodesiccation followed by much smaller and safer doses of roentgen radiation.

DR. KENDAL FROST: Some years ago I observed some patients who had been treated in this manner. It always amazed me how well the skin withstood the huge dose of radiation. I believe that the growth itself must act as a filter preventing the degree of degeneration which could be expected if as large a dose were given to normal skin.

DR. H. C. L. LINDSAY: Telangiectasia has started already. It is going to be quite marked. It has spread beyond the margin of the lesion.

DR. L. F. X. WILHELM: It will be interesting to see this patient again in two or three years. It seems worth while to cause a little telangiectasia to get such striking and, I believe, permanent results with one large dose of roentgen radiation.

DR. C. R. ANDERSON: Some members of the Minneapolis group of dermatologists are using from 8 to 10 skin units (from 2,400 to 3,000 roentgens) of unfiltered radiation with good results. They have gradually increased their dosage in order to avoid recurrences of the epithelioma. I do not think that they have had any trouble with this therapy.

XANTHOMA DIABETICORUM. Presented by DR. STANLEY CHAMBERS, DR. M. N. ROSENBERG and DR. STANLEY ANDERSON.

CASE 1.—R. C., a man aged 35, presented himself for examination on March 12, 1936, because of progressive weakness, loss of weight, increased appetite, shortness of breath, slight swelling of the ankles and puffiness under the eyes. All these symptoms appeared gradually during the preceding two years. Lesions first developed on the knees and elbows five months ago, and the eruption gradually spread to all the other areas. The patient presents multiple papules from 2 to 5 mm. in diameter. Some are discrete and others coalesce to form a small ovoid tumescence. The zone surrounding each lesion is mildly erythematous, and there is a yellow lipoid material at the apex and center. Lesions are scattered over the trunk, arms, elbows, knees and thighs. The patient has far advanced severe diabetes associated with marked lipemia.

The sugar content of the urine was 1.5 per cent; there were a few white blood cells and no albumin; the reaction for acetone was 3 plus, and the specific gravity, 1.030. The sugar content of the blood was 248 mg. and the cholesterol content was 3,125 mg. per hundred cubic centimeters on March 18, 1936. After the patient had followed a diabetic regimen for two weeks, receiving 62 Gm. of protein, 135 Gm. of fat and 75 units of insulin daily, gradual improvement in the general condition and gradual involution of the cutaneous lesions resulted. On April 2, 1935, the cholesterol content of the blood was 540 mg. per hundred cubic centimeters. The microscopic section showed foam cells invading the pars papillaris.

CASE 2.—This patient was presented at the meeting in January (ARCH. DERMAT. & SYPH. **34**:921 [Oct.] 1936).

DISCUSSION

DR. MOSES SCHOLTZ: In case 2 there are lesions of xanthoma. If the disorder is generalized xanthomatosis cutis it represents an unusual manifestation. I do not know why a disorder of this kind shows conspicuous atrophy in some places and inflammatory infiltration in others. I should rather assume that the condition is xanthomatosis secondary to some inflammatory process. I think that chronic acrodermatitis atrophicans should be ruled out.

DR. CHARLES R. CASKEY: I was interested to hear that in case 1 the cholesterol content of the blood was 540 mg. per hundred cubic centimeters. That is high, but such a high content is to be expected. It is interesting to know that insulin has reduced the amount of cholesterol in the blood. Thyroid extract has the same effect.

DR. WILLIAM H. GOECKERMAN: Dr. Scholtz expressed the speculations that went through my mind regarding case 2. If the disorder is xanthomatosis, the clinical picture is extraordinary. I have never observed a case of xanthoma in which the distribution approached that exhibited by this patient. This brings up the thought that the etiologic factor might be different from those in xanthoma diabeticorum, xanthoma tuberosum or xanthelasma. The condition suggests to me an involvement of the nervous system, particularly in view of the distribution. If such a predilection for infiltration of the nervous system could be demonstrated, it might explain the close clinical resemblance of this disorder to the neurogenous type of leprosy. Possibly a section of nerve could be obtained, merely to determine whether there is an infiltration with a predilection for the nerve tissues.

DR. C. R. HALLORAN: I do not know what studies have been made in this case since the last presentation, but clinically the picture is still of leprosy. I suggest that the case be studied with this in mind.

DR. H. C. L. LINDSAY: I agree with Dr. Halloran.

DR. STANLEY ANDERSON: It seems to me that the lesions are typically xanthomatous. On the eyelids are lesions typical of xanthelasma, and there is an extension from those areas over the scalp, face, chest and back, forming large sheet-

like yellowish infiltrations. At the margins of these areas may be seen small discrete papules with yellowish apexes of a lipoid substance similar to those seen in cases of xanthoma diabeticorum. On two occasions the cholesterol content of the blood has been 151.5 mg. and 187.4 mg. per hundred cubic centimeters, respectively and according to recent investigation on this subject the condition is supposed to be characterized by qualitative rather than quantitative changes in the lipoids of the blood. My co-workers and I interpret most of the thickening of the forearms and ankles as edema. When the extremities are elevated over night these swellings practically disappear.

DR. MOSES SCHOLTZ: How would Dr. Chambers account for a neoplastic disease showing atrophic changes with which xanthomatous lesions are never associated? One cannot deny that there are xanthoma deposits, but they may be secondary to a primary inflammatory process.

DR. STANLEY CHAMBERS: The common interpretation of xanthoma is certainly affected by the clinical picture in case 2. The better one understands the finer chemical and cellular characteristics and changes which occur in xanthoma, the easier it becomes to adjust one's mind to the true nature of xanthomatosis. One can regard it as a systemic disease, a disorder not confined to the skin but capable of invading any tissue to almost any extent. That deep involvement occurs seems proper and that secondary changes of fibrosis with clinical alteration naturally follow is reasonable. In this case such alteration has occurred in the presence of even moderate atrophy over widespread areas of involvement as a secondary result of a dense infiltration of these classic foam cells. In my opinion the condition in this patient gives a much clearer conception of xanthomatosis than cases ordinarily observed.

ARSENICAL KERATOSES OF THE PALMS AND SOLES; PRICKLE CELL EPITHELIOMA OF A FINGER; MULTIPLE BENIGN SUPERFICIAL EPITHELIOMA. Presented by DR. NELSON PAUL ANDERSON.

A. M. N., an American mail-carrier, states that he had no previous illnesses except asthma. At one time he took ascatco, a patent medicine for asthma, for two or three years, taking on the average one bottle per month. He was first seen on March 12, 1936, because of a lesion on the outer side of the right index finger. This apparently began as a wart which became larger and then cracked open and healed; occasionally a little pus would exude. The patient states that he had a similar lesion on the proximal phalanx of the left index finger. This lesion was removed surgically five years ago. On March 12, 1936, he presented hyperkeratosis of the palms and soles. The lesions on the palms tend to occur particularly on areas which would ordinarily be calloused. In addition to the aforementioned disorder there is a lesion the size of a large pea on the right index finger, from which material for biopsy made previously has been removed. Scattered over the trunk anteriorly and posteriorly and over the anterior aspect of the upper portion of the arms are multiple superficial scaly lesions from the size of a dime to that of a 50 cent piece, most of which are more or less eczematoid. No definite pearly borders can be made out, although the lesions are typical of multiple benign superficial epithelioma. A biopsy of material from the finger revealed prickle cell carcinoma of grade 2. Before the patient received sodium thiosulfate the urine contained 0.0369 mg. of arsenic per hundred cubic centimeters; after he received sodium thiosulfate it contained only a negligible trace of arsenic. The prickle cell epithelioma has been removed by the electrodesiccating current.

DISCUSSION

DR. KENDAL FROST: The picture shows the various manifestations of arsenical keratoses and epithelioma.

DR. C. R. HALLORAN: Recently there has been a great deal of discussion of arsenic as a drug and as a poison. Certainly there should be legislation to prevent

or curtail the general use of arsenic in patent medicines and in the preparation and marketing of foods as well as in the manufacture of clothing and other commodities, as deleterious effects may be caused by arsenic. However, I feel that it is a mistake to develop a fear complex as to the use of arsenic as a drug. When taken under proper supervision and in proper dosage it has proved valuable over a period of many years.

DR. STANLEY CHAMBERS: I agree with the diagnosis and appreciate the opportunity of observing this case.

DR. L. F. X. WILHELM: I think this is an interesting case.

DR. SAMUEL AYRES JR.: It is rather interesting that various types of epithelioma develop in persons who have taken arsenic. In one patient with arsenical keratoses whom I saw there developed two basal cell epitheliomas—one in a palm and one in an axilla—which disappeared as a result of treatment; subsequently there appeared in the axilla a metastasis which indicated a prickle cell growth.

DR. C. R. HALLORAN: Such lesions are not necessarily due to ingestion of arsenic.

DR. SAMUEL AYRES JR.: I think that the possibility of disorders of this type occurring is a good reason for not prescribing solution of potassium arsenite. A large proportion of patients with such disorders have been given solution of potassium arsenite for psoriasis. Patients will keep on using any drug which seems to help, and the fact that psoriasis is a recurring disease should make the physician especially cautious in prescribing arsenic. I think that solution of potassium arsenite should be used in extremely few instances.

DR. C. R. HALLORAN: In regard to the nomenclature, my opinion is that lesions such as those exhibited by this patient should be classified as benign superficial epithelioma caused by arsenic in some cases. In many cases in which lesions are clinically and histologically identical with those in this case there is no history of ingestion of arsenic and laboratory examinations reveal no arsenic.

DR. H. P. JACOBSON: I cannot but feel impressed with the significant relationship between the intake of arsenic and the occurrence of multiple superficial epithelioma which cases such as that presented by Dr. Anderson appear to suggest. It is true that not in all cases of epithelioma in which there appears to be a relation to the intake of arsenic is the disorder of the superficial type. In some it is of the prickle cell variety and rather highly malignant. I think that Dr. Anderson should be commended for calling attention to the probable relationship of these lesions to arsenic medication. I certainly should not go as far as Dr. Ayres suggests and condemn the use of solution of potassium arsenite. This medicament has been prescribed for many generations in probably millions of cases, and benefit has been evident in many instances. Cases of multiple cutaneous epithelioma are comparatively uncommon as compared with the many cases in which solution of potassium arsenite has been used.

DR. CHARLES R. CASKEY: This is one of the most interesting cases presented tonight. One seldom sees in one patient two types of epithelioma probably due to the same etiologic factor. I never mention solution of potassium arsenite to my students or to physicians without condemning it.

DR. NELSON PAUL ANDERSON: This case is interesting in that it exemplifies two types of epithelioma, both of which, I believe, are due to arsenic. I have accumulated considerably more evidence since I first wrote on this subject, and personally I am much opposed to the idea that the multiple benign superficial epithelioma with the pearly border is not due to arsenic. Dr. Hamilton Montgomery has attempted to classify the types of superficial epithelioma which develop as the result of previous use of arsenic. I cannot see how any one can make such a hair line distinction as regards the border. This patient exhibited one lesion with a pearly border.

CHICAGO DERMATOLOGICAL SOCIETY

RUBEN NOMLAND, M.D., *Secretary*

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MAX S. WIEN, M.D., *President, Presiding*

PARAPSORIASIS. Presented by DR. A. W. STILLIANS.

A CASE FOR DIAGNOSIS (HEMANGIOMA WHICH HAS UNDERGONE SPONTANEOUS INVOLUTION WITH RESIDUAL NODULES OF ANGIOFIBROMA?). Presented by DR. S. W. BECKER and DR. E. E. STENHOUSE.

This woman, aged 30, presents on the lower portion of the back a lesion which has been present since birth. It was said to be a vascular nevus, and so far as the patient knows it has not undergone any changes. There has been no ulceration, and no treatment has been administered. The personal and family history are unimportant except for the fact that the patient has always been frail and underweight.

On the lower left portion of the back there is a bluish red atrophic plaque, approximately 5 by 10 cm.; it is irregular in outline and somewhat depressed and exhibits several nodules within its outer margins. The largest nodule is 3 cm. in diameter, erythematous, elevated, and definitely tender to touch and pressure, so that the patient protects the involved areas when she leans against the back of a chair. The nodules have remained in the same location constantly and have never ulcerated.

Physical examination gave essentially negative results, the only abnormality being the cutaneous lesion.

A biopsy of material from the largest nodule showed angiofibroma.

DISCUSSION

DR. OTTO H. FOERSTER, Milwaukee: I should like to know why there is such extreme tenderness. It rather suggests the possibility of a neurofibroma.

DR. WILLIAM ALLEN PUSEY: Like Dr. Foerster, I think that the sensation suggests neurofibroma rather than angiofibroma.

DR. CLARK W. FINNERUD: On the basis of the histologic examination I think the lesion is properly classified as an angiofibroma.

DR. RUBEN NOMLAND: There was a question of a glomus tumor.

DR. M. E. OBERMAYER: Spontaneous involution with the formation of atrophic scars has been reported in all forms of hemangioma. Usually involution takes place in the center while the border region remains unchanged. Unna has observed that spontaneous involution is more frequently found in lesions located at the sacral region than in those located elsewhere, and he thinks that the constant tension to which the skin over a large flat bony area is exposed may be responsible for the involution. What is unusual in this case is the fact that the involution takes place on several spots which are separated by unchanged angiomatous tissue. To my knowledge this has been described only once in the literature, by Gougerot and Burnier in 1929.

DR. S. W. BECKER: This is an interesting case. We were handicapped because we did not know what the lesion was originally. The atrophy is not the picture of the scarring commonly seen in the so-called congenital defect of the skin. We considered some form of inflammatory process, such as syphilis or tuberculosis, but the lesion did not seem to conform to any type clinically. We thought the pain might be due to a neurofibromatous lesion, but the histologic picture is distinctly that of angiofibroma and shows no sign of nerve elements. The only explanation we could make was that it was some form of vascular nevus which had involuted, leaving these lesions of angiofibroma.

LEUKODERMA ACQUISITUM CENTRIFUGUM AND VITILIGO IN A PATIENT WITH ADDISON'S DISEASE. Presented by DR. M. E. OBERMAYER.

This white man, aged 46, of Hungarian descent, was admitted to the medical department of the Billings Memorial Hospital and was seen in consultation in the dermatologic department. He has lost 40 pounds (18.1 Kg.) and has suffered from extreme fatigue, malaise and vomiting during the last ten months. He has had no previous illnesses. He states that in 1935 white patches appeared on the finger-tips, chin, cheeks, perianal region, scrotum and trunk, while the rest of the skin became darker.

There are sharply demarcated areas of vitiligo on the aforementioned areas. On the chest and back are lesions consisting of a darkly pigmented papule surrounded by a sharply demarcated zone of pigmentation. The rest of the skin is dark bronze, and there is no definite accentuation of pigmentation in the normally hyperpigmented areas. There is no pigmentation of the mucous membranes.

The Wassermann and the Kahn reactions were negative. The blood count and differential count were normal. The blood pressure was 78 systolic and 50 diastolic. The basal metabolic rate was + 8 per cent. The dextrose tolerance test and chemical examination of the blood gave normal results. An Ewald test meal revealed no free hydrochloric acid.

A biopsy specimen from one of the central papules is presented; it shows a pigmented nevus.

DISCUSSION

DR. H. R. FOERSTER, Milwaukee: I think it is rather unusual to see so many lesions of leukoderma circumscriptum and the association of vitiligo.

DR. JAMES H. MITCHELL: A number of years ago I saw a small child with two lesions of this type on the back, and I have had the child under observation from time to time since. I have a picture of the well pronounced lesion and also of the spontaneous involution. No treatment of any kind was given, but at present there is no sign of a mole or of depigmentation.

DR. A. W. STILLIANS: Dr. Smith has a patient, a boy aged about 10 years, who has a similar eruption. Dr. Smith and I hoped to present him today but were unable to do so. I think these cases disprove the theory that leukoderma centrifugum is a special disease different from vitiligo.

DR. S. W. BECKER: The occurrence of achromia around nevi is of interest, for it is well recognized that depigmentation is associated with the central nervous system, and Laidlaw has brought forth the interesting theory that nevi are remnants of tactile corpuscles in some of the lower forms; hence it may be that this peculiar nerve formation in nevi causes the vitiligo.

DR. M. E. OBERMAYER: I was interested in Dr. Mitchell's remarks. The center of these lesions is not always a nevus; depigmentation around fibromas, senile verrucae and sarcoid has been reported. I do not attempt to give an explanation for this peculiar condition. The case was presented merely as a good example of leukoderma acquisitum centrifugum.

ERYTHRODERMA DESQUAMATIVUM (LEINER'S DISEASE). Presented by DR. MAX S. WIEN and DR. MINNIE O. PERLSTEIN.

This girl, aged 3½ years, exhibits an eruption which has been present since she was 2 months old. The patient is the first of two children; she was born at term after a prolonged and difficult instrumental delivery; the weight at birth was 7 pounds (3,200 Gm.). A sister, aged 2 years, apparently has no cutaneous involvement. The patient had no eruption until she was 2 months of age, when an erythematous eruption developed on both cheeks; it became generalized within the next three months. She had pneumonia at 5 months, at which time the eruption improved, but after recovery it became worse. Since the onset of the eruption the child has had frequently recurring boils and "cold." She does not perspire,

has frequent chills and does not tolerate hot weather well. Her general health has been good, her development normal and her mentality good. She was bottle fed, the diet including cow's milk, evaporated milk, goat's milk and various dry milks. The eruption had remained unchanged since its onset, but there has been a diminution in acuity over the extremities during the past year. There is slight pruritus at night or when the child becomes warm. She has complained of abdominal pain at intervals, which was relieved somewhat by administration of yeast.

Both parents are living and well. The paternal grandfather had an eruption on his scalp from his eighth to his twentieth year, and a maternal uncle had infantile eczema of the face.

The child exhibits a diffuse moist erythema of the entire skin and large thin white laminated scales; the eruption is accentuated over the face, back, elbows, knees and chest. The areas about the eyes, nose and mouth are not involved. There are no scales on the hands, forearms, feet and lower half of the legs, but these areas present a diffuse lichenified erythematous dermatitis. The entire scalp is covered with yellowish white dry scales which mat the hair. The eruption on the scalp extends to the postauricular area and merges with the eruption on the face. The eyebrows are also crusted. The finger-nails are apparently normal.

The child is well nourished and exhibits good tissue turgor. The lower eyelashes are absent and the upper eyelashes are sparse. The eyes show lacrimation, and the openings to both dacryocystic ducts are small. The scleras are slightly blue. The bridge of the nose is flat; the child sniffles constantly and has a mucopurulent nasal discharge. The teeth are carious, the two upper incisors being entirely dystrophic and chipped. The mucous membrane of the pharynx is pale; the tonsils are slightly hypertrophied. The hands and feet are cyanotic.

The liver and spleen are not palpable. Fluoroscopic examination of the heart and lungs gave negative results; the shadows at the hilus of the right lung were increased.

DISCUSSION

Dr. William Allen Pusey: I think the disorder is essentially an erythematous xeroderma, a congenital defect that results in thin, sheetlike exfoliation. Some one brought up the point that it did not appear until two months after birth, but I think this does not militate against that diagnosis.

Dr. Henry E. Michelson, Minneapolis: I feel that Leiner's disease is more closely related to seborrheic dermatitis than anything else. Leiner's work seems to indicate that the disorder is a metabolic disturbance more common in breast-fed than in bottle-fed infants. I think that in later years Leiner felt that the disease was more benign than he thought when he first described it. Possibly some of the cases in which the disease was fatal were instances of the infantile type of reticulo-endotheliosis. I have not seen slides from such lesions.

Dr. Max S. Wien: This is an interesting condition not frequently seen. This is the third case I have observed. Leiner originally described the condition in 1908, reporting forty-three cases, in forty-one of which the patients were breast-fed infants. The disorder differs from congenital ichthyosiform erythroderma, in which there are more involvement of the flexor aspects, more redness and an ichthyotic skin. Leiner first described the condition and stated that it follows a slow course and may go on indefinitely. It is probably due to an auto-intoxication from the bowel. Changes in the nails may or may not be present, and the glands may be enlarged, but I know of no changes that link the disorder with lymphoblastoma. My co-workers and I are trying to get this patient into the hospital, but the mother is unwilling. In the present stage the disease conforms to the condition described by Leiner as erythroderma desquamativum or Leiner's disease. Treatment consists of local application of soothing agents and a high vitamin diet.

Dr. William Allen Pusey: I consider the condition a congenital defect of the skin.

DR. MAX S. WIEN: In the other cases which I observed there was a tendency to dry seborrhea-like patches. This case is characterized by the marked seborrhea-like involvement of the scalp and the lesions on the face. If the child's clothing were not removed one would consider the disorder to be a severe seborrheic dermatitis of the scalp and face.

PSEUDOXANTHOMA ELASTICUM. Presented by DR. E. A. OLIVER.

CASE 1.—This woman, aged 22, states that so far as she knows her cutaneous condition has been present since birth, but it has spread considerably during the last two years. No angioid streaks have been found in the retina. There are no subjective symptoms.

On either side of the neck there are palm-sized patches composed of yellowish papules from the size of a pinhead to that of a pinpoint arranged in a reticulated pattern. Similar patches are present in both cubital fossae.

CASE 2.—This man, aged 65, states that his present condition has been present for twelve years. On each side of the neck above the collar there is a typical eruption of pseudoxanthoma elasticum. Along the posterior aspect of the neck there is senile atrophy with considerable wrinkling and thinning of the skin. There is considerable loss of vision, and the retina exhibits old angioid streaks and one or two active streaks.

A biopsy showed probably two types of changes in the skin—a senile degeneration of elastic tissue in the upper portion of the corium and a curling and fragmentation of the elastic tissue suggestive of pseudoxanthoma in the deeper portion of the tissue.

DISCUSSION

DR. CLARK W. FINNERUD: In men about the age of the patient in case 2 who have been more or less constantly exposed to sun and wind it is difficult to differentiate clinically between senile elastosis and pseudoxanthoma. I think it is difficult to tell where one condition ends and the other begins, and I am not sure that it is always possible to differentiate the two histologically.

DR. RUBEN NOMLAND: I think in case 2 the neck shows evidence of two conditions, pseudoxanthoma elasticum and senile elastosis, and I think that microscopically there is also evidence of both conditions. I think the two disorders are related changes in the elastic tissue. This man has no changes suggesting pseudoxanthoma elasticum in the flexures of the body, and I think one cannot say that he has only pseudoxanthoma elasticum as the two conditions are present.

DR. E. A. OLIVER: I think in case 1 there is a true picture of pseudoxanthoma elasticum. The patches on the side of the neck and in the cubital fossae seem typical. In case 2 two conditions are present. The saffron yellow appearance of the patches of pseudoxanthoma elasticum on the sides of the neck is distinct, and the senile changes also show up prominently, so that two pictures are present —pseudoxanthoma elasticum and senile atrophy. In the past many cases of these conditions have been overlooked. I believe that more of them can be recognized if physicians are on the alert for them.

ADENOMA SEBACEUM (PRINGLE) WITH NAEVUS SEBACEUS AND FIBROMA MOLLE ASSOCIATED WITH TUBEROUS SCLEROSIS. Presented by DR. S. W. BECKER.

This boy, aged 13, has had convulsions for six years; lesions have been present on the face and back for eight years. They appeared as flat colorless lesions on the face and behind the ears and gradually extended and became confluent. Soon afterward several depigmented plaques were noted on the back; these were followed by elevated lesions. The lesions on the face later became erythematous.

Over the face and neck there are telangiectatic papules from 1 to 2 cm. in diameter, and behind one ear there is an elevated yellowish plaque. On the lower portion of the back is an elevated soft yellowish brown plaque 0.5 by 1 cm. in size. Some depigmented plaques are present on the back.

A roentgenogram of the skull showed diffusely scattered calcified plaques throughout the brain substance. The third, fourth and left lateral ventricles were visualized in an encephalogram, but the right lateral ventricle was not. A roentgenogram of the chest showed no abnormalities except that the heart was about 10 per cent undersized. An electrocardiogram revealed slight notching of the QRS interval in leads I and III. Auricular extrasystoles occurred in pairs. An intravenous pyelogram showed no gross renal abnormality. Spina bifida occulta of the first sacral segment and some enlargement of the liver downward were observed.

Examination of the fundi revealed disks smaller than normal and a dense pigmented area at the temporal portion of each. The pupils reacted through a small range on stimulation with direct light. There were limitation of outward movement of the right eye and rapid nystagmus in both eyes when the patient looked to the left and rapid rotary nystagmus when he looked upward. There was internal strabismus when the eye was at rest.

Biopsy of material from a lesion on the face showed telangiectasia and adenoma sebaceum; that of material from a lesion on the back showed fibroma molle.

ADENOMA SEBACEUM. Presented by DR. M. H. EBERT.

This woman, aged 36, American, married, states that her cutaneous condition is of thirty-two years' duration. No other members of her family present a similar condition.

There is an eruption composed of papules of various sizes involving the central portion of the face; it is most pronounced about the nasolabial folds and adjacent areas and is accompanied by telangiectasia. A verrucous nevus is present on the sacral area and upper part of the abdomen.

The history indicates that epilepsy developed at puberty and gradually disappeared when the patient was about 26 years old. Her mentality seems to be low.

DISCUSSION

DR. JAMES H. MITCHELL: About two weeks ago my co-workers and I saw in the clinic a boy, aged 6 years, with marked lesions of the red type of adenoma sebaceum. He was epileptic and was a rather high grade moron. He presented similar lesions in the lower portion of the spinal region. It is rather interesting that three patients with such conditions should be seen in so short a time.

DR. DAVID LIEBERTHAL: Considering the polymorphous lesions of the skin and the low mentality, in the case of the boy I should suggest the diagnosis of Recklinghausen's disease. The face of the woman presents the picture of Pringle's adenoma sebaceum; this together with the other cutaneous manifestations, however, may justify the consideration of Recklinghausen's disease in her case also.

DR. WILLIAM ALLEN PUSEY: The small flat lesions exhibited by the boy bring up the question that comes up constantly when one sees patients with these congenital defects. This boy has several cutaneous defects, and he also has mental defects. This combination of congenital defects is often seen, and I think it is not surprising that it occurs. One might say that in the building of the person the specifications were not carried out properly—the brick was not laid right. I do not know whether the idea is worth anything, but it gives me a standpoint from which to consider these cases of congenital defects. About thirty years ago I had occasion to study a large number of nevi, and I came to the conclusion that the way to describe the histologic picture of nevi is to say that they may present a combination of all tissues and structures that occur in the body, and while little is gained in trying to differentiate them as clinical entities, the conceptions can be cleared if one remembers that the development of the person has been carried out badly—it reminds one of the saying of a man with a harelip, "When God made me he came near ruining me."

A Case for Diagnosis (Psoriasis? Lupus Erythematosus?). Presented by Dr. Clark W. Finnerud.

This woman, aged 38, presents an eruption of the face of seven years' duration. The lesions have shown a tendency to appear and regress; they occur as red scaling macules the size of a finger-nail and larger. The patient states that she had a few similar lesions previously on the scalp, trunk and extremities. Aside from slight itching in some of the lesions on the face there is no pruritus. At times she has been entirely free from the eruption, and she has never noticed any seasonal influence.

There are a half-dozen or more guttate and larger erythematous scaling macules on the face. At present the scalp, the nails and the body are not involved.

In 1934 and 1935 the lesions on the face received half a dozen roentgen treatments, each treatment consisting of from one-half to one skin unit, without much improvement. Local treatment has consisted of application of salicylic acid and ammoniated mercury in ointment form; as internal medication salicin and arsenic have been prescribed.

The blood pressure has always been normal, and repeated examinations of the urine have given normal results.

DISCUSSION

Dr. Henry E. Michelson, Minneapolis: I am much more interested in discussing lupus erythematosus than the condition exhibited by this patient. I feel certain that in many cases of chronic lupus erythematosus relapses occur in the early part of the spring. I do not believe that discrete lupus erythematosus can be treated satisfactorily even though some advances have been made since gold and bismuth preparations have been used. Recently I have begun to treat patients with this disorder with various drugs including gold and bismuth preparations and sodium hydnocarpate. My practice at present is to give a course of treatment every three months, as I feel that it is better to prevent recurrences than to wait for them.

Dr. Otto H. Foerster, Milwaukee: I wish to offer a different diagnosis. I think the disorder is probably a macular seborrheic dermatitis which the patient has traumatized daily by picking off the scales, thus causing a small amount of infiltration to develop. She has scaling lesions of seborrheic dermatitis on one ear, and there is a history of a seborrheic patch on the scalp extending onto the forehead, which I think is possibly of some value in establishing the diagnosis.

Dr. James H. Mitchell: Recently I presented at the clinic a patient whom Dr. Nomland had treated for several years. The results do not support Dr. Michelson's advice. That patient has been given alternating treatment with bismuth and gold preparations, and I think she is no better now than when the treatment was begun.

Dr. M. E. Obermayer: I cannot see how a diagnosis of lupus erythematosus can be made clinically with certainty; there is no atrophy in spite of the relatively long duration. Histologic examination would be necessary to rule out recurrent psoriasis of the face.

Lichen Corneus Hypertrophicus. Presented by Dr. M. H. Ebert for Dr. Oliver S. Ormsby.

This man, aged 72, presents an intensely pruritic eruption of the legs of four years' duration.

There are numerous discrete firm flat-topped elevated papules varying in size from that of a match head to that of a bean; the color is that of the normal skin. Some lesions are excoriated and some are slightly verrucous. The eruption extends from the knees to the ankles. There is also a group of excoriated papules on the extensor surface of the right forearm, and a smaller number are present on the left forearm.

Biopsy showed marked hyperkeratosis, a normal stratum granulosum and marked acanthosis. In some areas the papillae were elongated and extended to near the keratin layer. A slight infiltrate of round cells was seen about the vessels of the upper portion of the corium, which were slightly dilated. In another area the picture had been modified, probably by trauma, showing marked edema of the epidermis with formation of microvesicles. The corium beneath this area was edematous. The perivascular round cell infiltrate was considerably more marked, and there was proliferation of the fixed connective tissue cells.

Special stains for amyloid gave negative results.

DISCUSSION

DR. WILLIAM ALLEN PUSEY: These changes have long been described as occurring in lichen obtusus corneus.

DR. DAVID LIEBERTHAL: The diagnosis that suggested itself when I saw the patient was lichen obtusus. The histologic sketch drawn on the blackboard by Dr. Ebert somewhat suggests prurigo nodularis. I am sure the members will be indebted to Dr. Ebert if he will at a later meeting report in greater detail his observations on sections from one of the smaller lesions on the arm, which are of a more recent date, together with the results of examination of a larger lesion on the legs.

DR. RUBEN NOMLAND: In cases such as this the only way a certain differentiation from amyloidosis can be established is by biopsy, and in this case biopsy definitely ruled out amyloidosis. I think the diagnosis of lichen obtusus corneus is correct.

DR. OTTO H. FOERSTER, Milwaukee: I should also consider the possibility of a papular form of neurodermatitis, with lichenified thickening of the lesions due to trauma from scratching. The history that a long period of itching preceded the development of any lesions makes me think this diagnosis should be given consideration.

DR. FREDERICK R. SCHMIDT: There is a good deal of confusion in the diagnosis of lichen corneus hypertrophicus, a name first introduced by Brocq. In this case when one looks at the lesions from the side the color that was described by Brocq is present; therefore, I think the disorder has some features of lichen planus.

DR. M. H. EBERT: I am sorry Dr. Ormsby is not here to discuss this case. He is particularly interested in the lichenifications and has done a great deal of work on them and straightened out the terminology. He feels that the term used by Pautrier, lichen corneus hypertrophicus, is the correct one for this disorder. Lichen obtusus corneus of Brocq is a synonym for prurigo nodularis and refers to a different disorder. When I studied the histologic picture the first thing I looked for was amyloidosis; Dr. Nomland has referred to that diagnosis. With his assistance that was ruled out absolutely. I then looked for evidence of lichen planus, as lichen corneus hypertrophicus frequently is found in association with lichen planus. To my mind, in these sections there is no evidence of that disorder. The infiltrate is not suggestive of lichen planus, and if the disorder is lichen corneus hypertrophicus it is of the type that occurs independently of lichen planus. When one considers the localized neurodermite one steps on more doubtful grounds. I do not feel competent to make a diagnosis on the basis of the histologic picture. In lichen simplex chronicus there is more edema in the rete and in the upper portion of the corium than is present in some of the sections in this case. I think that if only one section were seen one would have an idea different from that which suggests itself when both sections are studied. I accounted for the edema in the corium and in the rete in the first section by the fact that the central area had been traumatized. I know that Gans in his discussion of the lichenifications mentions this as a possibility. The picture in the other section would pass for typical prurigo nodularis, but clinically the condition is not that at all. Clinically

it fits in with Dr. Ormsby's diagnosis of lichen corneus hypertrophicus, a term which Pautrier used, and a condition which he said is associated in some cases with lichen planus and in others occurs as an independent entity.

Dr. William Allen Pusey: I wish to say a word about my particular antipathy, namely, changing names. To change a name from lichen obtusus corneus, which is a well established denomination, to lichen corneus hypertrophicus is doing nothing but confusing nomenclature. The picture in this case is not at all that of neurodermite—a bad name, for it predicates something beyond its meaning. Dr. Nomland goes a little further for he has shown that some of these lesions are amyloid changes in the skin. Whether that is true or not, there is in this case a definite clinical picture which has long had a good name—better still, a name that predicates nothing about the etiology.

Tuberculosis Verrucosa Cutis and Lupus Vulgaris. Presented by Dr. James H. Mitchell and Dr. Ralph H. Scull.

This Negro, aged 35, presents a cutaneous disorder of twelve years' duration. He states that the first lesions appeared fourteen days after he injured his left hand while working in the Union Stock Yards and that they resembled the miliary lesions that studded the intestines of the animal he was disembowling at the time of the injury. Eight months later the left axillary glands became involved, broke down and suppurated. From this site lesions similar to those of the hand gradually extended from the axilla to the back and shoulder.

There are elevated plaques with warty, papillary dirty grayish surfaces involving the dorsum, palm and fingers of the left hand, and some healed scarring is present on the dorsum of the hand. About the axilla, shoulders and chest are grouped pea-sized elevated inflammatory lesions that show some crusting. There is no subjective sensation except when the lesions contain pus; then slight pain is present.

The Wassermann and the Kahn reactions were negative.

Biopsy showed no tuberculoid reaction in the verrucous portion, but a few typical tubercles were present in tissue from the shoulder.

DISCUSSION

Dr. Marcus R. Caro: I think that histologically the slides of the lesion from the hand show the characteristics of tuberculosis verrucosa cutis.

Dr. Henry E. Michelson, Minneapolis: I wish to express my thanks for the privilege of seeing this patient. The verrucous type of tuberculosis frequently causes an ascending lymphangitis, but to see a lupus vulgaris develop at the proximal distribution of the lymphatics is, I believe, unusual. English authors in particular adhere to the view that lupus vulgaris is spread and disseminated by the lymphatics.

Dr. Max S. Wien: At the last meeting of the Southern Medical Association, in November, there was presented a case of tuberculosis verrucosa cutis of the hand in which the manifestations resembled those in this case. There were lesions of the type seen in inoculation tuberculosis of the skin and a combination of two types of tuberculosis cutis.

Dr. Ruben Nomland: It has been demonstrated that in Negroes all types of tuberculosis take a form different from that in white patients. I believe when one thinks of tuberculosis one should realize that tuberculosis in Negroes is decidedly different from tuberculosis in white persons. I think that in Negroes the disease presents more tendency to hematogenous dissemination associated with a great deal less resistance to the infection. I believe Negroes show pictures of tuberculosis and tuberculids that probably have largely disappeared among white persons but are present in Negroes in a primitive form.

Dr. James H. Mitchell: What seems to me one interesting feature in this case is the probability that the patient was allergic to the human type of organism at the time he was inoculated with the bovine type.

LUPUS ERYTHEMATOSUS TELANGIECTATICUS. Presented by DR. F. E. SENEAR, DR. MARCUS R. CARO and DR. EARL R. PACE.

This woman, aged 52, married, presents an eruption on the face of twenty-nine years' duration. When she was first seen, two weeks ago, the eruption consisted of symmetrical red areas involving the front of the cheeks, the nose and the chin; they were made up of small bright red compressible papules on a diffuse darker red background with telangiectasia. On moderate pressure with the diascope the vascular element disappeared, leaving apparently apple jelly nodules. A diagnosis of lupus miliaris disseminatus faciei seemed most probably correct at that time, and a biopsy was made. Calamine lotion was prescribed, and after a few days the gross appearance was materially improved; the papular element had largely disappeared, but firm pressure with the diascope showed that the telangiectasia persisted. The more probable clinical diagnosis at this time seems to be lupus erythematosus telangiectaticus.

Biopsy of a specimen taken from the cheek showed the epidermis to be thin and flattened. There was a thin adherent scale; the granular layer was discontinuous, and the epidermal cells showed considerable edema with colliquative disorganization of the basal layer in one area. The papillary layer was edematous. The superficial vessels were dilated, and about them lay many free red corpuscles and a few brown chromatophores. In the upper layer and extending deeply about the blood vessels, sebaceous glands and sweat glands were circumscribed nests of densely packed lymphocytes with an admixture of free red corpuscles. The elastic fibers were lost in the areas of cellular infiltration, while elsewhere in the upper part of the corium both the collagen and the elastic fibers were degenerated and stained poorly.

The histologic changes were consistent with the diagnosis of lupus erythematosus.

DISCUSSION

DR. H. R. FOERSTER, Milwaukee: This patient, I think, presents two types of lesions. The erythematous lesions of long standing may represent the telangiectatic type of lupus erythematosus, while the small miliary papules about the chin and in the malar areas suggest lupus miliaris disseminatus. I cannot conceive of any of these lesions being of twenty years' duration. It occurs to me that possibly the apparent lupus erythematosus is of tuberculous etiology and that both types of lesions may have a common origin.

DR. CLARK W. FINNERUD: A portion of the eruption resembles the rosacea-like tuberculid, and there are several lesions suggestive of lupus disseminatus faciei. Histologically, there is a well localized reaction, largely lymphocytic. The disorder could be an early tuberculoid structure, even though classic changes are absent.

DR. HENRY E. MICHELSON, Minneapolis: I am sorry that Dr. Ormsby is not here for I have always considered his description of the telangiectatic type of lupus erythematosus as classic. My conception is that that type is more reteform or veil-like than this eruption, which is papular. I cannot possibly accept the diagnosis of lupus disseminatus faciei. The section I examined did not show that condition in the least.

DR. MARCUS R. CARO: When we first saw this patient the lesions were definitely papular, and clinically the disorder was typical lupus miliaris disseminatus faciei. A biopsy was made on material from one of the lesions, and the histologic picture was not consistent with the clinical findings but was more suggestive of lupus erythematosus. In about a week the patient returned, and the lesions had improved so rapidly that the clinical picture was also more characteristic of lupus erythematosus.

A CASE FOR DIAGNOSIS. Presented by DR. E. A. OLIVER.

This man, aged 23, presents painful furuncle-like lesions of the fingers which have recurred for two years. The first lesion appeared on the palmar aspect of the

left thumb, and since thirty-two lesions have developed. The one on the second finger is the thirty-third, and a new lesion is now developing on the left little finger.

The patient was first seen at the Central Free Dispensary on March 14, and he stated that when a lesion first appeared the skin was tense, shiny and painful, as if a deep-seated abscess was developing. The only relief from the pain was secured when the lesions were opened, but no pus discharged.

DISCUSSION

DR. JAMES H. MITCHELL: This patient presented himself last week with a definitely deep-seated lesion that was obviously filled with a whitish fluid which suggested pus. I said at the time that I knew of no such disorder. The lesion was not disturbed in order that the patient might be presented today, for I think he exhibits a unique picture.

DR. RUBEN NOMLAND: Probably Dr. Oliver will bring up the question of a self-produced eruption. I think before that is considered one should have a reasonable explanation in mind as to how the patient might produce the lesions, but so far as I know there is no reasonable explanation. I should be inclined to regard the lesions as the result of embolic phenomena or vasomotor disturbance. Necrosis follows, and relief is obtained only when the lesions are opened.

LICHENOID SARCOID AND LICHEN SCROFULOSORUM. Presented by DR. JAMES H. MITCHELL and DR. RUBEN NOMLAND.

This Negress, aged 37, married, presents lesions of the eyelids of seven months' duration and of the chest of twelve years' duration; the eruption is accompanied by intermittent pruritus.

On the upper eyelids, inner canthus and inner surface of the lower eyelids are semifirm papules varying in size from that of a pinpoint to that of a split pea; some are discrete and others are grouped. They are translucent and have a somewhat pinkish tinge. Over the lower portion of the neck and upper anterior portion of the chest are pinpoint papules which are discrete and grouped, pinkish, fairly firm and smooth. The patient states that the condition began with one lesion on the upper left eyelid after she had paralysis of the left side of the face. The lesion was pruritic, and she applied iodine. The condition later extended over the areas mentioned. The lesions on the chest disappeared during the summer but recurred during the winter, and the patient does not believe that these lesions are related to the lesions of the eyelids.

There is no history of tuberculosis in the patient's or in her husband's family. A test with a 1:1,000 dilution of tuberculin on March 6, 1936, and a second test on March 13 gave negative results.

DISCUSSION

DR. S. W. BECKER: The lesion on the eyebrow is typical sarcoid. I do not know whether lesions of lichen scrofulosorum would disappear so quickly.

DR. HARRY E. MICHELSON, Minneapolis: I hope that Dr. Nomland will eventually collect enough data on this type of tuberculosis in Negroes to lay down the criteria for diagnosis. At present one must not attempt to classify it too sharply with one group or another of the accepted types as seen in white patients. In sanatoriums in Minnesota I have not been told that pulmonary tuberculosis is much different in Negroes and in white patients, but I do think that on the whole in Negros the disease is more resistant to treatmcnt and much more apt to produce progressive lesions than in white patients.

DR. RUBEN NOMLAND: There is no doubt that this disorder is typically present in Negros. It is a form of presumably hematogenous tuberculosis. The recovery of the tubercle bacillus after inoculation of animals is missing, but that is missing in so many cases of tuberculid that that lack of evidence is hardly sufficient to rule out the diagnosis. Why Negroes should react in this specific way needs to be explained. The reason I spoke of hematogenous tuberculosis being more common in Negroes was that a large group of statistics based on autopsies show that the

disease is at least four times more common in Negroes than in white persons (Pinner, M., and Kasper, J. A.: Pathologic Peculiarities of Tuberculosis in the American Negro, *Am. Rev. Tuberc.* **26**:463 [Nov.] 1932).

SCLERODERMA CIRCUMSCRIPTUM EN COUP DE SABRE. Presented by DR. JAMES H. MITCHELL and DR. RUBEN NOMLAND.

This boy, aged 16, presents a lesion of twelve years' duration which was not preceded by any local disturbance so far as is known. His general health has always been good, and there has been no pain at any time. Dentition was normal. The right naris has always been more or less closed, and the patient has difficulty in blowing his nose. There is a moderate degree of exophthalmos. His mentality is good, and he has no difficulty in keeping up with his work in the first year of high school. He has never received any radium therapy; about ten years ago his father took him to a radiologist, who promised to benefit the condition by the use of radium, but the fee was prohibitive.

The lesion is about 11 cm. in length, extending from the right supra-orbital notch upward to the right of the median line and for 3 cm. beyond the hair line of the forehead into the scalp; it is 2 cm. wide on the forehead and tapers to a point at the notch. The portion involving the scalp is firm and white, but that involving the forehead is soft and somewhat pigmented. There is a marked depression in the lesion on the forehead, and the examining finger receives the impression of loss of bone substance. Dr. Nora Brandenburg examined the patient and reported as follows:

There was a marked nasal obstruction due to a deflected septum and a very high palatal arch. The nasal obstruction apparently was due to a deflection and dislocation of the quadrilateral cartilage of the septum, the anterior border of the columella and crista incisurae lacrimalis to the left causing narrowing of the left ala nasi. A large left inferior turbinate also helped to obstruct the left vestibule. The deflection of the septal cartilage was so great to the right that it completely closed the right vestibule by impinging on the right inferior turbinate. This point of contact between the cartilage and the turbinate was bathed in mucopurulent discharge. Both maxillary antrums were indistinct on transillumination. The frontal antrums were clear. There was impacted cerumen in the right external auditory canal. Marked thickening of the cartilage of the left auricle with angulation was present, causing narrowing of the right external auditory canal. Impacted cerumen was present also in the left auditory canal.

A submucous resection and also the removal of the impacted cerumen from the ears would benefit the patient.

No roentgenogram has been made. The Wassermann and the Kahn reaction were negative. The patient is the third of four children. All the other children are alive and well. The mother of the patient is a widow in excellent health, and she has never had a miscarriage.

DISCUSSION

DR. WILLIAM ALLEN PUSEY: I think it is useful to observe a case of such a disorder. It is an interesting localization, and I thank Dr. Mitchell for presenting the patient.

DR. JAMES H. MITCHELL: This is a typical example of the scleroderma circumscriptum en coup de sabre. Although the disorder is rare there are sufficient cases on record to be of aid to any physician sued for malpractice on the charge that he produced such a condition by the use of radium. In the two cases which I have presented before this society no radium had been used.

LYMPHOGRANULOMA VENEREUM. Presented by DR. M. H. EBERT.

This Negress, aged 28, was born in Mississippi but has resided in Chicago for nineteen years. She states that she has had eczema since the age of 4 years. In October 1934 the first lesion, a papule, was noted under the right gluteal fold. In three weeks ulceration developed and advanced until the patch was the size

of a cup, but the lesion was never painful. This gluteal lesion healed in May 1935. Two months later a small ulceration developed in the right popliteal area, and during July the left popliteal area became involved. Since that time both ulcers have slowly progressed.

In each popliteal area is a shallow serpiginous ulceration the margin of which is elevated into a fold, giving the ulcer an appearance of being deep. The base of the ulcer is covered with beefy granulation tissue, with areas of purple-gray epithelial islets. A distinctly sour odor emanates from the lesion. In the margins are several button-like nodules with central ulcerations.

Biopsy showed marked proliferation of the rete pegs, and the cutis revealed a dense infiltration of connective tissue cells and round cells. The epithelium was ulcerated. The base of the ulcer was made up of polymorphonuclears, round cells and many histiocytes. Donovan bodies were noted in the mononuclear cells of the deeper portions of the cutis.

Smears from the lesion revealed many intracellular and extracellular diploid bodies resembling Donovan bodies.

RUBEN NOMLAND, M.D., *Secretary*

April 15, 1936

MAX S. WIEN, M.D., *President, Presiding*

PUSTULAR PSORIASIS (?) WITH INVOLVEMENT OF THE NAILS. Presented by DR. CLARK W. FINNERUD.

This man, aged 37, seeks advice because of a disorder of five finger-nails of six months' duration. He states that the changes in the nails were preceded by inflammation around the nails and that small blisters began to form on all surfaces of the distal portions of the fingers about one month after the changes in the nails were first noticed. There has been no involvement of the scalp, elbows or other sites. The patient states that he had athlete's foot about a year ago. His general health is good, and the history and general examination disclosed no suggestive foci of infection.

Five finger-nails exhibit thickening, pitting and irregularity. The skin of the distal portion of the fingers is somewhat red, infiltrated and stippled with numerous discrete, active and desiccated vesicles, and two groups of vesicles are present on the palms.

Numerous specimens taken from the nails and from the vesicles as well as a small amount of seropurulent material which could be expressed from the tissues around one nail disclosed no yeasts or higher fungi in extemporaneous potassium hydroxide preparations. No fungi were demonstrable in material from between the toes.

DISCUSSION

DR. FREDERICK R. SCHMIDT: I think that in dealing with these recalcitrant eruptions of the hands and face more attention should be paid to the work of Dr. Andrews, of New York, who corroborated the work of Keneri. These disorders are distinguished (1) by the absence of fungi and pyogenic organisms, (2) by leukocytosis and (3) by the presence of focal infection. The third point is the one I wish to emphasize. I have had several patients with recalcitrant eruptions under observation. A woman whom I observed recently was suffering from endocarditis lenta and had an eruption similar to that exhibited by Dr. Finnerud's patient. She had periodic eruptions of vesicles, sometimes associated with fever and sometimes not, and pain in the dorsolumbar portion of the spine which confined her to bed. She also had leukocytosis, and while she was under observation she

presented a vesicular eruption of the palms and feet. She had consulted several other dermatologists, and while she was under my observation examination failed to disclose fungi of any type. A disorder of this kind is not always a focal infection; it may be systemic.

DR. M. H. EBERT: I think there is more than one clinical entity included in this group of recalcitrant eruptions. There is the group of disorders which a number of dermatologists call pustular psoriasis of Barber which produces intraepidermal pustules which dry up and flake off. In that condition the patch is well defined; the lesions continue to recur in groups, and there is considerable hyperkeratotic scaling. I can see how that would suggest pustular psoriasis. Then there is the disorder in which there are vesicles containing sometimes a white fluid resembling milk and sometimes a clear fluid. In this disorder the lesions seem to be deeper than those of the first type I mentioned, and they are usually found on the palms and soles. Acrodermatitis continua of Hallopeau must also be considered. This condition commonly starts about the nails after trauma and spreads from one digit to another. The lesions in that disorder are intradermal pustules also. In this case the history of paronychia with involvement of the nails suggests that the disorder may be the vesicular type of acrodermatitis continua. Audrey pointed out that some of the lesions in acrodermatitis continua are vesicular, and I think this should be borne in mind in the case under consideration.

DR. HAMILTON MONTGOMERY, Rochester, Minn.: I think this patient has typical psoriasiform pitting of the nails, and I should like to call the condition psoriasis with pustulation. Regarding acrodermatitis continua of Hallopeau, in Hallopeau's first cases the condition was characterized by a generalized eruption associated with intermittent attacks of fever. One also encounters a localized form of the disorder which is equivalent to dermatitis repens.

DR. JAMES H. MITCHELL: As I know how difficult it is to find fungi in material from the nails, I wish to ask how long Dr. Finnerud looked for fungi.

DR. E. A. OLIVER: I do not agree with the diagnosis of psoriasis of the nails. In spite of the fact that careful search has been made for organisms, I do not think that failure to find the fungus rules out ringworm. Last year I had a patient with this type of recalcitrant eruption of the palms and soles whose disorder cleared up beautifully after his prostate was thoroughly massaged and some infected teeth were removed. He showed psoriatic changes in the nails as well as the eruption on the palms and soles, but he did not exhibit the type of lesions presented by Dr. Finnerud's patient. Despite the fact that no fungi were found, I should hesitate to make the diagnosis of psoriasis of the nails without seeing more evidence of psoriasis than there is at present.

DR. FREDERICK R. SCHMIDT: In acrodermatitis continua, as I understand it, the one distinguishing feature is that the vesicles and pustules contain pyogenic organisms. That is important in the differential diagnosis.

DR. M. H. EBERT: I think Barber reported some cases of acrodermatitis continua in which he observed organisms, but the French writers have stated that they have not recovered organisms in cases of that disorder.

DR. HAMILTON MONTGOMERY, Rochester, Minn.: At the Mayo Clinic my co-workers and I observed a case in which all the requirements for a diagnosis of the generalized acrodermatitis continua of Hallopeau were fulfilled. The pustules were loaded with cocci. I believe there have been included under this term many disorders which probably belong elsewhere; that is particularly true of disorders in which the lesions have contained no micro-organisms.

DR. CLARK W. FINNERUD: I saw this patient but once before today, last Friday. I first tried to demonstrate organisms in good specimens from two of the nails. I obtained material from well down in the soft portion under the hard part of the nail plate, but I observed no fungi. I then took specimens from all the nails, about twenty specimens in all, but none showed fungi. I also took

some scrapings from the palms, from areas between the toes and from the expressed material around the nails, but all the results were negative. I have made no cultures as yet. The eruption on the hand is difficult to account for on the basis of fungous infection of the nails, but the changes in the nails look as though they might well be the result of a nutritional disturbance around the base of the nail, the manifestations in the nails occurring secondarily to a paronychia due to a yeast. I could not account for the groups of vesicles on the fingers and palms. I am still at a loss to explain all the features in this case. I shall make a further search for fungi and make cultures. I am not yet convinced that fungi are not responsible for the changes in the nails, but I do not see how they could be responsible for the resistant lesions on the hand. The patient had a fungous infection on the soles, but that had cleared when I saw him.

GENERALIZED SARCOID OF MIXED TYPE. Presented by DR. OTTO H. FOERSTER, Milwaukee, DR. H. R. FOERSTER, Milwaukee, and DR. LESTER M. WIEDER, Milwaukee.

This woman, a housewife aged 58, noted the first lesions of her present eruption five years ago. They appeared simultaneously over the extensor surfaces of the forearms and the lower portions of the legs as small, red "lumps" under the skin which were tender to pressure but were otherwise symptomless. The lesions on the arms—bluish to brownish-red plaques with slightly elevated margins giving an impression of central depression—were more highly colored than those on the legs. On pressure with the diascope a yellow-red diffuse infiltrate remains. Since the eruption was first noted it has continued to spread, gradually involving all the extremities, the sides of the neck, face and upper portion of the forehead at the hair line, the abdomen and the buttocks. The lesions on the arms have been superficial and have enlarged peripherally to become confluent, while those on the legs have consisted of deep-seated more tender nodules, ranging in size from that of a pea to that of an English walnut and showing a tendency to produce marked retraction and atrophy of the overlying epidermis. Fine branny scaling has been noted at times on the lesions on the arm, while on the legs the lesions have occasionally formed a heavy, tightly adherent crustlike scale. No ulceration has been noted except on one lesion over the shin, which may have been traumatized. The patient states that a lesion on the thigh at a site from which material for a biopsy was removed required six months to heal. She has never observed spontaneous and complete involution of any lesion. During the past two years there has been much increase in the discomfort, and edema of the lower portion of the leg has appeared. The patient has lost 10 pounds (4.5 Kg.) in the past five years, but she has shown no symptoms of an active tuberculous process elsewhere during that period or previously.

The patient had an attack of eclampsia when she was 23; about fifteen years ago a ganglionectomy for tic douloureux was performed; in 1928 the patient underwent a pelvic plastic operation which was followed by thrombophlebitis of the legs; five months later an appendectomy and bilateral oophorectomy were performed for "tumors of the ovaries"; this was followed by recurrence of the thrombophlebitis. An epithelioma was removed from the nose by electrocautery in 1929.

The patient on several occasions visited the department of dermatology of the University Hospital, Ann Arbor, Mich., where a diagnosis of sarcoid of "mixed type" was made. The reaction to 0.1 cc. of a 1:1,000 dilution of tuberculin was negative. Roentgenograms of the chest made at that hospital in December 1932 showed thickening of the interlobar septum on the right and accentuation of the bronchovascular trunks on both sides. These changes were still present two months ago, when the patient was first examined by us, and in addition the fibulas and radii showed proliferative periostitis, probably of long duration, which was thought by the roentgenologist to be due to tuberculosis.

Determination of the blood pressure and examination of the urine gave normal results. The lesions have shown no response to administration of pills containing arsenous acid or to injections of sodium arsenite in the past.

Examination of material from lesions on the forearm and on the thigh showed a generally similar picture, except that in the material from the lesion on the thigh the infiltrative process was much more deeply seated than in that from the lesion on the arm, involving the subcutis for the most part, while the material from the arm showed involvement of the pars subpapillaris and reticularis. The epidermis and papillary body showed little change. The infiltrate consisted of collections of epithelioid cells, many of which contained giant cells while others showed some adjacent lymphocytic and plasma cell infiltration. Nodules in various stages of evolution were seen, ranging from early collections of dense, almost purely lymphocytic infiltrate to sharply defined groups of epithelioid cells with central giant cells, separated by fibrous trabeculae in the older areas. A few nodules showed a small amount of central necrosis. Marked vascular changes, characterized by variable degrees of thickening and in some places by complete obliteration of the walls, were evident throughout.

DISCUSSION

DR. RUBEN NOMLAND: I think the disorder corresponds to the typical annular type of Boeck's sarcoid.

DR. HAMILTON MONTGOMERY, Rochester, Minn.: I think this is a clear example of a mixed type of sarcoid, showing all types of lesions from sarcoid of Boeck to that of Darier and Roussy and characteristics of lupus pernio. Of the two histologic sections shown, one would be consistent with sarcoid of Boeck and the other with the disorder described by Darier and Roussy. A few years ago Dr. Goeckerman emphasized the close interrelationship of disorders of this group. I think that there has been too much subdivision of the group of tuberculosis cutis indurativa, including not only the sarcoids but also nodose and ulcerative types of erythema induratum and the so-called nodular tuberculosis of the hypoderm described by Wende.

DR. HENRY E. MICHELSON, Minneapolis: I think this is a marvelous example of generalized sarcoid; the lesions show all the stages of development—early lesions, stationary lesions, lesions with central resolution and telangiectatic scarring. I heartily agree that in order to include all the lesions the diagnosis should be sarcoid of the mixed type. Recently I used chaulmoogra oil intramuscularly in a case of a somewhat similar disorder, and the injections brought about a focal reaction.

DR. FREDERICK R. SCHMIDT: I think this case typifies clearly what dermatologists are trying to do in Europe in regard to sarcoid. Darier withdrew his subdivision of the Darier-Roussy type of sarcoid and classed it as erythema induratum. I think that that should abolish all these terms and do away with the subdivisions of sarcoid. This disorder should be called miliary lupoid, except for the type of which Dr. Nomland has presented cases, a type occurring particularly in Negroes and not seen in Europe.

DR. LESTER M. WIEDER, Milwaukee: The case was presented because we felt that it illustrates well the morphologic multiplicity of the sarcoid type of lesions as existing in one patient. Typical lesions of both the Boeck and the Darrier-Roussy type are present, and many of the lesions on the legs are typical of erythema induratum. We thought the disorder graphically illustrated the various lesions of cutaneous tuberculosis in a patient also showing evidence of old internal tuberculosis.

DR. HENRY E. MICHELSON, Milwaukee: I think that until there is an internationally accepted nomenclature it is best to use the old term, and as far as I am concerned I prefer the term "sarcoid" to "Besnier-Boeck disease." In any event, it is merely a matter of dermatologists' understanding one another, and the name is not so important as the agreement on the entity.

LUPUS ERYTHEMATOSUS INVOLUTING AFTER REMOVAL OF FOCI OF INFECTION. Presented by DR. S. W. BECKER and DR. M. E. OBERMAYER.

CASE 1.—This woman, aged 31, of English-American stock, was first presented at the meeting of the society in October 1933 (ARCH. DERMAT. & SYPH. 29:465 [March] 1934). She was seen by one of us in January 1935, in consultation with members of the staff of the department of surgery, as she had presented herself at that department because of repeated attacks of indigestion. At that time the lesions were unchanged, and the patient presented slightly erythematous and slightly atrophic brownish pigmented plaques on the face, scalp and ears. The condition was considered to be subacute lupus erythematosus; that diagnosis was confirmed by biopsy. A diagnosis of cholecystitis was made in the surgical department. Removal of the gallbladder was advised, and operation was performed on Jan. 28, 1935. The gallbladder was found to contain over 600 stones of various sizes; its wall showed a markedly inflammatory reaction.

Since that time the cutaneous lesions have improved steadily. The pigmentation disappeared more slowly. Spontaneous involution was completed in about one year. The only treatment the patient received has consisted of 2 grains (0.13 Gm.) of quinine sulfate three times a day, which she took for four and one-half months.

CASE 2.—This woman, aged 55, of American stock, was first seen at the clinics of the University of Chicago in July 1935. She then presented diffuse erythematous lesions on the forehead, cheeks, nose, sternum and arms of eleven weeks' duration. She had previously taken quinine orally.

A biopsy specimen from a lesion on the chest showed subacute lupus erythematosus, and treatment consisting of quinine sulfate by mouth was instituted. No pulmonary disease was found. Because she complained of genito-urinary disturbances the patient was referred to the department of urology, where a diagnosis of pyonephrosis was made, and the right kidney was removed in August 1935. Spectacular improvement followed. However, since the lesions did not clear entirely the patient was given small doses of ammonium succinimide-aurate. She did not keep her appointments and has received only six injections since December 1935; this is thought to account for the presence of the few inactive lesions she now exhibits.

Sections showed typical subacute lupus erythematosus.

DISCUSSION

DR. HARRY M. HEDGE: I intended to present a patient today who came to the clinic on March 24. She was acutely ill, but the only history I could obtain was that of severe tonsillitis. She had a streptococcic infection of the throat and lupus erythematosus which was becoming generalized over the arms, neck, legs, hands and posterior aspect of the shoulders. I hospitalized her on March 27, and she died on April 3. An autopsy was performed, and no sign of tuberculosis was observed anywhere. There was evidence of double lobar pneumonia and septicemia due to a hemolytic streptococcus. There were no lesions of the mediastinum or of any part of the chest. The only abnormality was an atrophic spleen. The lupus erythematosus was markedly generalized.

DR. FREDERICK R. SCHMIDT: I think one should be more careful about the disorder called lupus erythematosus. The elder of these patients (case 2) had an eruption of eleven weeks' duration. All dermatologists see patients with eruptions simulating lupus erythematosus in the acute stage. I have a patient now who has an eruption of eight weeks' duration. Not in all the cases does the eruption develop into classic lupus erythematosus, but it represents a toxic erythema, and I think that unless there is evidence of lupus erythematosus that has developed from a chronic eruption the disorder should not be diagnosed as lupus erythematosus. I think that the disorders which clear up after the removal of tonsils or teeth are more or less in the group of toxic erythema and probably will never develop into typical lupus erythematosus.

DR. HAMILTON MONTGOMERY, Rochester, Minn.: Dr. Becker showed a section from material obtained in one of his cases which, I believe, had all the characteristics of subacute disseminate lupus erythematosus, and I understand that the histologic picture in the other case was similar. I do not think that the disseminate forms of lupus erythematosus should be confused with the Libman-Sacks syndrome. I still feel that the histologic picture of lupus erythematosus is diagnostic if a lesion that is of several weeks' duration is examined and the various changes which Dr. Goeckerman and I have enumerated are observed and evaluated properly. At the Mayo Clinic my co-workers and I have observed several cases in which chronic subacute lupus erythematosus cleared up after a focus of infection was removed, and I think Dr. Becker is to be congratulated on the results he has obtained in his cases.

DR. THEODORE CORNBLEET: Several years ago I presented a case of acute disseminate lupus erythematosus. The diagnosis was concurred in. The woman was pregnant at the time. The eruption became rather fulminating, and after a consultation was held it was decided to induce abortion. After that the condition cleared up quickly. There are therefore conditions other than foci of infection which may play a part in lupus erythematosus disseminatus.

DR. E. A. OLIVER: It is known that lupus erythematosus will clear up at times when a focus of infection is removed, and I think Dr. Becker is to be congratulated on the outcome in these two cases.

DR. S. W. BECKER: The point brought out by Dr. Schmidt is interesting. If the facial erythema which is acute at the onset subsides and the patient is left with lesions of chronic lupus erythematosus one may be fairly sure that the diagnosis of lupus erythematosus is correct. By the same token, if in a patient who had subacute lesions for several years there suddenly develops facial erythema with symptoms of acute intoxication, one may be fairly sure that the disorder is acute lupus erythematosus. There are other types of facial erythema, including the Libman-Sacks syndrome, which are at least closely associated with lupus erythematosus. The condition is probably always due to infection, foci of which are sometimes not easy to discover. On the Continent lupus erythematosus is considered to be tuberculous; in England it is said never to be tuberculous, and in the United States opinions are divided. Bloch and Ramel, by repeated passage of infective material through animals, have isolated first Much's granules and later acid-fast bacilli from blood and lymph nodes of patients with acute lupus erythematosus. My co-workers and I have repeated this work in several cases and have obtained negative results. Bloch and Ramel expressed the belief that lupus erythematosus is due to the filtrable virus of tuberculosis. Many workers who study tuberculosis do not recognize the presence of the filtrable virus, but there seems to be sufficient evidence that the possibility cannot be ignored. I believe it is not illogical to assume that lupus erythematosus is due to a combination of the filtrable virus of tuberculosis and some pyogenic infection. In the two cases presented today the infection was severe and outstanding, and removal of the focus resulted in practically complete recovery. I believe that both patients still have a sword of Damocles hanging over them, and they must avoid sunshine, since they are still potentially subject to recurrent eruption of lupus erythematosus.

DR. JAMES H. MITCHELL: According to Dr. Becker's statement (ARCH. DERMAT. & SYPH. **29**:465 [March] 1934), when he first saw the younger of these two patients I think he did not regard the disorder as lupus erythematosus, and when I presented her on two occasions before this society that diagnosis was not whole-heartedly accepted. I was inclined to classify the disorder in the group between the Libman-Sacks syndrome and acute lupus erythematosus.

SYPHILIS. Presented by DR. L. F. WEBER.

This man, aged 35, was first seen on Jan. 3, 1935. He had an ulcer on the right tonsil and psoriasiform syphilid of the arms and legs. The Wassermann

reaction of the blood was negative. The patient was kept under observation for several weeks, at the expiration of which the Wassermann reaction became positive. The eruption improved under antisyphilitic treatment, except for lesions of the palms and soles.

DISCUSSION

DR. A. W. STILLIANS: I do not see why the disorder should not be regarded as syphilis. In my opinion the lesions on the palms and soles are definitely syphilitic. It is well known that in certain cases syphilis is resistant to treatment, and this man has lesions which for some reason or other are recalcitrant.

DR. M. H. EBERT: I agree with Dr. Stillians that the disorder is resistant syphilis. I think the configuration of the lesions and the keratotic lesions on the palms and soles fit in with a syphiloderm. I believe the matter could be settled by biopsy; this would show whether there are characteristic changes in the vessels. If such changes are present, treatment should be instituted with old arsphenamine, and I have no doubt that excellent results would be obtained.

DR. LESTER M. WIEDER, Milwaukee: Recurring lesions of syphilis are apt to occur in areas of trauma, and this patient's lesions are on the palms, soles and elbows. In regard to therapy, my co-workers and I have observed several cases of syphilis in which relapses occurred in spite of treatment with the arsphenamines and with mercury, bismuth and potassium iodide, but in which the disorder responded to mapharsen. I suggest consideration of the use of this drug in this case.

DR. M. E. OBERMAYER: I do not feel that the lesions can be explained on the basis of treatment-resistant syphilis. This patient had syphilis of the nodulo-ulcerative type, which responded promptly to treatment. As far as I know it does not happen in a case of resistant syphilis that some lesions involute promptly while other do not. I feel that the recalcitrant keratotic lesions have no connection with syphilis, and I suggest the possibility of gonorrheal keratoderma.

DR. DAVID LIEBERTHAL: I think that good results would be obtained by hospitalizing the patient and thus removing all pressure exerted on the lesions. And in addition I suggest alternating mixed treatment with more intensive mercury medication.

DR. L. F. WEBER: This patient has received neoarsphenamine and mercury and the usual treatment for syphilis. He is laborer who mixes cement and mortar, and I think his occupation is of importance in producing the lesions of the palms and soles. When he stopped working for several weeks the lesions improved, and when he returned to work they became aggravated. I am aware that lesions of the palms and soles are difficult to heal with any type of antisyphilitic therapy.

CUTIS LAXA (CUTIS HYPERPLASTICA). Presented by DR. A. W. STILLIANS and DR. S. J. ZAKON (by invitation).

This man, aged 40, was formerly a painter. He was referred to the dermatologic department of the Northwestern University Medical School with a diagnosis of syphilitic aortitis and multiple recurrent furunculosis.

The skin shows a peculiar velvety texture and glides easily over the underlying structures. It is markedly thin and hyperelastic and can be stretched for from 5 to 6 cm., retracting spontaneously. The joints of the thumbs and fingers can be easily hyperextended. The face, knees and legs show numerous atrophic and hyperpigmented scars. The patient states that he has had this condition since childhood.

The Wassermann and the Kahn test and examination of the blood, urine and sputum gave negative results.

A biopsy of material from the right knee revealed unusual thinness of the skin. The epidermis was thinned to a few rolls of epithelial cells, and absence of papillae and rete pegs was noted. There was no abnormality of the epithelial cells. The cutis revealed marked vascular dilatation and a slight round cell

infiltration and contained an abundance of elastic fibers, which could be seen here and there in whorls and in some places in large clumps. There was no cellular reaction around these elastic fibers.

DISCUSSION

DR. RUBEN NOMLAND: I was impressed with the color of this patient's skin. Seen from a distance of 4 or 5 feet (1.2 or 1.5 meters) the skin was distinctly yellow, presenting an appearance somewhat similar to that of pseudoxanthoma elasticum, and in the microscopic section there was marked increase in the fibers, not unlike that seen in that disorder. It is possible that there is a relationship between this disorder and pseudoxanthoma elasticum.

DR. HAMILTON MONTGOMERY, Rochester, Minn.: I was glad of the opportunity to observe this case, as it is the first time I have had an opportunity to study the histologic changes associated with this condition. The sections show marked increase in elastic tissue fibers and, in addition, breaking up and curling of the fibers. The picture, however, is different from that of pseudoxanthoma elasticum in that the individual elastic fibers do not appear to be swollen or edematous, and in sections stained with hematoxylin and eosin the elastic fibers are not evident and do not stain blue as they do in cases of pseudoxanthoma elasticum. Therefore, I doubt if one would find any disturbance of calcium metabolism in cases of cutis laxa. The yellow hue that the patient presents clinically may possibly be due to the increase in the elastic fibers.

DR. THEODORE CORNBLEET: There has been some evidence that epidermolysis bullosa is due to a deficient amount of elastic tissue in the skin. This case exemplifies just the opposite condition (increase of elastic tissue), and it would be interesting to see whether it would be more difficult for bullae to develop in this patient's skin than in that of a normal control.

DR. S. J. ZAKON (by invitation): This patient was presented because of the extreme rarity of the condition and because there seems to be a lack of histologic study of it in the American literature. The skin seems to be susceptible to infections, and it is because of that feature that the patient came to the clinic. Except for the absence of pseudotumors, the triad of symptoms of the Danlos syndrome is present, namely, hyperelasticity of the skin, hyperlaxity of the joints and fragility of the skin (Tobias, Norman: Danlos Syndrome Associated with Congenital Lipomatosis, ARCH. DERMAT. & SYPH. **30**:540 [Oct.] 1934.

LEUKODERMA ACQUISITUM CENTRIFUGUM (PERINEVOID LEUKODERMA). Presented by DR. A. W. STILLIANS and DR. E. M. SMITH JR. (by invitation).

This boy, aged 10 years, was first seen at the clinic of the Northwestern University Medical School on Aug. 5, 1935. His mother stated that the depigmentation was first noted on his chest three years ago and was not limited to moles. Soon after the original disorder was noted areas of depigmentation appeared about the brown and dark brown moles which had been present for some years previously. Recently it was noted that the moles about which the skin had lost its pigment were disappearing. Moles not in vitiliginous areas have not changed.

There are areas of uncomplicated vitiligo and a dozen or more areas of depigmentation from 1 to 2 cm. in diameter with a brown to dark brown papule in the center. Similar moles without the surrounding pigmentary disturbance are also present. Removal of a central mole did not seem to alter the course of the surrounding vitiligo.

The Wassermann and the Kahn reaction were negative. Examination of the blood showed 4,510,000 erythrocytes, 9,050 leukocytes, and 12.6 Gm. of hemoglobin (Sahli). The basal metabolic rate was + 6.5 per cent. Analysis of the gastric contents after an Ewald test meal showed 20 cc. of free hydrochloric acid and 28 cc. of total acid per hundred cubic centimeters.

A section is presented.

DISCUSSION

DR. S. W. BECKER: This patient's disorder is somewhat similar to that exhibited by the patient with Addison's disease and leukoderma acquisitum centrifugum who was presented last month (ARCH. DERMAT. & SYPH., p. 326, this issue). The condition is interesting, and the section shows tremendous round cell infiltration, for which I am unable to account; it may have something to do with the subsequent disappearance of the nevi.

DR. A. W. STILLIANS: My co-workers and I are interested in the case because of the effort by several authorities to differentiate this patient's disorder from ordinary vitiligo. The disappearance of the nevi along with the spread of vitiligo and the presence of a normal amount of free acid in the stomach are also of interest, the latter in view of a recent claim that free acid is not found in the gastric content of patients with vitiligo.

A CASE FOR DIAGNOSIS (DERMATITIS HERPETIFORMIS?). Presented by DR. M. H. EBERT and DR. B. B. BEESON.

This woman, aged 56, who was born in Norway, ten months ago noticed some pruritus about the genitalia. Shortly afterward there developed what her physician diagnosed "impetigo" on the nucha. This cleared up in a month, but the pruritus persisted, and blisters appeared in the genitofemoral folds. These lesions gradually improved, but about two months ago there was an acute flare-up. The lesions in the groins became active and spread down the thighs, and new blisters appeared on the neck. The patient states that she has taken no medicine, except occasionally a chocolate-coated tablet as a laxative. She passed the menopause six years ago. Since she has been hospitalized the lesions have not been pruritic if kept covered. There have never been any oral lesions.

The areas of involvement are well defined and extend from the genitofemoral fold onto the inner surface of each thigh. The left side is much more involved, the lesions extending to the posterior surface of the thigh and into the popliteal region. In this area, particularly at the border, there are many tense bullae from the size of a matchhead to that of a bean filled with clear fluid, as well as macerated erosions of the same size. The background is slightly erythematous. The collar region and the supraclavicular spaces are similarly involved.

The Nikolsky sign was negative. Examination of the blood showed 8 per cent, and that of fluid from the blister 60 per cent, eosinophils. New bullae continue to appear daily in the aforementioned regions but never on other sites. The temperature has remained normal.

Biopsy showed a large subepidermal vesicle filled with coagulated serum, eosinophils and polymorphonuclears. The upper two thirds of the corium was edematous, and the tissue spaces contained large numbers of eosinophils, polymorphonuclears and young connective tissue cells. A similar infiltrate was found about the larger vessels, in which there was moderate edema of the intima.

DISCUSSION

DR. DAVID LIEBERTHAL: It is well to be cautious in deciding on a definite diagnosis at this stage of the disorder. The further interest lies in the treatment, and I suggest that the therapy recommended for pemphigus by Dr. Davis, of St. Louis, namely, administration of hemostatic serum and arsenic, be tried.

DR. M. E. OBERMAYER: On examining the patient I noticed that one leg showed excessive perspiration while the other leg was dry. This disturbance of perspiration is in line with the almost strictly unilateral distribution of the eruption. There is a possibility that the disorder is a pemphigus-like eruption produced by a nerve lesion, and I suggest that investigation be carried out along that line.

DR. M. H. EBERT: I presented the patient because her disorder is unique in my experience. She has had lesions always of the same type for ten months. The lesions are confined to sites that are well outlined. They are increasing in size. I am greatly obliged to Dr. Obermayer for the observation that perspira-

tion is present on one side only. We had noticed that the eruption is more marked on one side, but there are numerous lesions on the other side also. The woman passed the menopause six months ago, and there is no evidence of endocrine disturbance so far as I can find. I made a tentative diagnosis of dermatitis herpetiformis, but many features of the disorder do not fit in with that diagnosis. We shall observe the case further with extreme interest.

EPIDERMOLYSIS BULLOSA WITH MELANOSIS AND HYPERTRICHOSIS. Presented by DR. M. E. OBERMAYER.

The patient with epidermolysis bullosa who was presented at the meeting of the society in December 1935 (ARCH DERMAT. & SYPH. **33**:1091 [June]) has been hospitalized for study. No distinct hypersensitivity to light could be detected, but porphyrin was found regularly in the urine and in the feces, and the patient recalled that she had noticed for several years that her urine was red. Besides the normal ether-soluble uroporphyrin, which was found in amounts up to 0.06 mg. per day, a new kind of porphyrin, insoluble in ether but soluble in ethyl acetate, which previously has not been reported on, was found in amounts of 2.6 mg. per day. Coproporphyrin, deuteroporphyrin and protoporphyrin were present in the feces. The amount of coproporphyrin was increased. A photograph showing uroporphyrin octamethyl esters obtained from the patient's urine is presented.

The next step in this study will be to reexamine the patient at the time lesions appear. If retention of porphyrin is found at that time it may be of significance in the mechanism of the lesions of epidermolysis bullosa. If not, it may be assumed that this is simply a case of chronic porphyrinuria.

PHILADELPHIA DERMATOLOGICAL SOCIETY

VAUGHN C. GARNER, M.D., *Secretary*

March 20, 1936

HERBERT J. SMITH, M.D., *Chairman*

GRANULOMATOUS TYPE OF BROMODERMA. Presented by DR. WILLIAM O. ROOP, Atlantic City, N. J.

R. K., a widow aged 55, about two months ago began taking a patent medicine for her "nerves"; soon after pustules developed on the face. The eruption grew steadily worse under the continuance of the medication. She then consulted a physician, who suspected syphilis and requested that a test of the blood be made. When I first saw the patient she presented several small discrete papulopustular lesions on the lower eyelids, and on her forehead and face close to the eyes there were a few granulomatous button-like lesions the size of a 25 cent piece, surfaces of which were somewhat crusted and studded with pustules. The Wassermann and the Kahn reaction of the blood were negative. The urinalysis showed bromine and a trace of albumin. The blood pressure was 110 systolic and 60 diastolic.

DISCUSSION

DR. SIGMUND S. GREENBAUM: I agree with the diagnosis.

DR. CARROLL S. WRIGHT: Is it definitely known that the preparation which the patient has been taking contains bromide? It is described as being a "nerve tonic."

DR. FRED D. WEIDMAN: I should like to comment on the definite miliary abscesses. If the lesions occurred singly, without this clear history, it would be easy to mistake them for lesions of blastomycosis.

DR. EDWARD F. CORSON: I think the disorder is typical bromoderma.

DR. WILLIAM O. ROOP, Atlantic City, N. J.: When I first saw this patient, before I took her history, the first diagnosis that occurred to me was blastomycosis, but later I did not think there was any doubt that the condition was a bromoderma. The medicine that she had been taking was "Dr. Miles' nerve remedy" which is said to contain potassium bromide. In addition to that, the urinalysis disclosed traces of bromine. The lesions are exceedingly slow in clearing up under almost any treatment. I think they have even been treated surgically, by desiccation or curettage—not an ideal method of treatment. I should like to call attention to the low blood pressure in this patient. I have frequently observed a low blood pressure in patients with such conditions, and I think it is a matter of importance; it may be a determining factor in the development of drug eruptions. I think it is worth while to check up on this in order to discover how constantly it occurs.

A CASE FOR DIAGNOSIS. Presented by DR. MORRIS MARKOWITZ.

E. P., a woman aged 50, shows slightly raised symmetrical and reticulated brownish red lesions on the inner surfaces of both legs from about 2 inches (5 cm.) above the knees to the ankles. The condition has been present for about two months. The patient never had any cutaneous eruption before and has always been in good health. The Wassermann and the Kahn reaction of the blood were negative.

DISCUSSION

DR. J. M. SCHILDKRAUT, Trenton, N. J.: The condition looks like erythema ab igne.

DR. FRED D. WEIDMAN: I agree with the diagnosis, although the patient states definitely that she was not exposed to heat. She may have some good feminine reasons for concealing the history.

DR. THOMAS BUTTERWORTH, Reading, Pa.: I agree with the diagnosis of erythema ab igne.

DR. FRED D. WEIDMAN: I remember making a diagnosis of that sort when Dr. Hartzell was my preceptor, but he said: "No, that is not erythema ab igne; it is pigmentatio ab igne."

LEPROSY. Presented by DR. THOMAS BUTTERWORTH, Reading, Pa.

F. C., a Chinese man aged 48, presents large gyrate and marginated slightly infiltrated erythematous lesions, especially over the right cheek, the nose and the left side of the forehead. There is a discolored area on the palm of the right hand, and there are atrophic scars on both feet. The lesions on the face developed about five years ago. The condition on the right hand was noted about five months ago, in September 1935; weakness in the right foot was noted about nine years ago. There is muscular atrophy of the right hand and right leg. The right ulnar nerve is large and easily palpated. Physical examination of the heart and lungs showed no abnormalities. Serologic tests of the blood were negative. The sugar content of the blood was 94 mg. per hundred cubic centimeters; the urea nitrogen content, 17 mg., and the uric acid content, 4 mg. Examination of the blood showed 4,650,000 red cells, 5,400 white cells and 13 Gm. (75 per cent) hemoglobin. The differential cell count showed 75 per cent neutrophils, 23 per cent lymphocytes, 1 per cent eosinophils and 1 per cent basophils. Biopsy showed chronic granuloma consistent with leprosy, but acid-fast organisms were not demonstrated.

The patient has taken potassium iodide, and a series of nasal smears are being examined; so far the results have been negative. Material obtained by puncture of the ulnar nerve also failed to disclose Hansen's bacillus.

DISCUSSION

DR. FRED D. WEIDMAN: I agree with the diagnosis. I have tried to demonstrate the micro-organism and have failed. A number of smears from the nose

have been examined, and material from an ulcer has been carefully taken by a laryngologist. I have stained two of the preparations personally, using different methods of decolorizing, and the same is true of the histologic sections. The histologic picture is indicative of leprosy of the tuberculoid type; there are giant cells, but there are also numerous foamy cells rather characteristic of leprosy. Still, I cannot demonstrate the organisms in the material. This may be due to the fact that the tissue was fixed in formaldehyde, but that would not explain the failure to find the organism in the nasal smears. I suggested that Dr. Butterworth obtain some deep scrapings from the cutaneous lesion and that the material be stained. If that fails I think it will be necessary to resort to experiments with animals and see if the tubercle bacillus can be demonstrated.

Dr. J. M. Schildkraut, Trenton, N. J.: It seems to me I have read that an injection of chaulmoogra oil might act as a provocative and bring out the organism.

Dr. Frank C. Knowles: It is known in regard to the demonstration of the organism that when exacerbations occur the organism can be found and when the disease is quiescent the organism cannot be discovered. Continued search, therefore, may disclose the organism eventually.

Dr. Sigmund S. Greenbaum: I want to call attention to the psoriasiform lesions on the lower extremities and on the forearms, which have been termed psoriasiform leprids. One is apt to think of leprosy as occurring in only three forms, but there are other types of lesions as well as these which simulate psoriasis. There is also on one leg the glossy skin of atrophoderma neuriticum, which in this case, I think, is a manifestation of injury to the nerves due to the leprous infection.

Dr. Fred D. Weidman: Dermatologists often refrain from making the diagnosis of leprosy when the organisms are not observed, but clinically this is a definite case of leprosy.

Acrodermatitis Perstans; Scrotal Tongue; Erythema Migrans of the Tongue. Presented by Dr. Sigmund S. Greenbaum.

Dermatitis Herpetiformis. Presented by Dr. J. M. Schildkraut.

Acne Necrotica and Resulting Cicatricial Alopecia. Presented by Dr. H. J. Goldman for Dr. Sigmund S. Greenbaum.

Lichen Planus Annularis on the Penis. Presented by Dr. J. M. Schildkraut, Trenton, N. J.

A. K., a man aged 25, presents on the under-surface of the penis and adjacent part of the scrotum a number of flat white papules and several small annular lesions. The latter are definite, slightly elevated rings with clear centers. The condition has been present for three months.

DISCUSSION

Dr. Frank C. Knowles: I think the disorder resembles an infection with a yeast. The whitish color militates against the diagnosis of lichen, and the eruption is not shiny. This curious white color is more characteristic of an infection with a yeast.

Dr. Fred D. Weidman: I do not believe that the disorder is lichen planus. In places it makes one think of obstructed sweat ducts. It may be analogous to miliaria crystallina.

Dr. Vaughn C. Garner: I think the lesions are analogous to the keratolysis exfoliativa described by Wende.

Dr. Sigmund S. Greenbaum: I agree with Dr. Knowles that the disorder is a fungous infection and that it ought to be looked into carefully.

Dr. Frank C. Knowles: I should suggest treatment with a 2 per cent solution of a silver salt.

MORPHEA. Presented by DR. E. R. GROSS for DR. JOSEPH V. KLAUDER.

E. C., a boy aged 4 years, presents several dollar-sized grayish circumscribed indurated patches with violaceous areolae in the left clavicular region, in the left antecubital fossa and on the middle of the forearm. The condition began when the patient was 1 year old. In the course of the next three years two new patches developed on the left forearm. There is no history of trauma. Report on the biopsy was as follows: The specimen consisted of a small bit of skin in which the epithelium was thin and deficient in rete pegs. Portions of several hair follicles were present. These also appeared to be atrophied. There were no sebaceous glands in the section. The subepithelial tissue consisted of dense connective tissue with a large amount of hyalin.

DISCUSSION

DR. SIGMUND S. GREENBAUM: I have observed several cases of morphea in children. It would be interesting to determine the calcium content of the blood and on that basis to ascertain the value of treatment with ammonium chloride.

DR. FRED D. WEIDMAN: I do not think that in cases of involvement of the upper extremities, particularly in chronic, apparently hopeless situations like this, the examination is complete without consideration of cervical ribs. Generally the examination for that condition gives negative results, but once in a while the abnormality is found.

DR. DONALD M. PILLSBURY: I wish to report the successful use of ammonium chloride in a similar disorder. I do not think that that treatment should necessarily be dependent on any abnormality of the calcium content of the blood. In a case of scleroderma involving the left arm and left leg in which there was a marked difference of temperature in the two extremities the response to 15 grains (0.975 (Gm.) of ammonium chloride three times a day was good; I should say there was about a 75 per cent involution. Some of the scars remained, of course, but all the changes in color disappeared, and there was much greater mobility of the extremities. My co-workers and I have also used that treatment in a case of morphea without result.

DR. ROBERT L. GILMAN: I have had an experience similar to that of Dr. Pillsbury's in the case of a girl who is now about 13 years old. I used a variety of treatment, including physical therapy and administration of some glandular extracts, and not until I gave the patient ammonium choloride was there any improvement. Later a 30 to 40 per cent improvement was observed. The dose was 15 grains three times a day.

DR. THOMAS BUTTERWORTH, Reading, Pa.: I think the ammonium chloride could be complemented by the ketogenic diet. The purpose of the ammonium chloride, of course, is to produce acidosis, and that can be helped considerably by the proper selection of diet.

DR. DONALD M. PILLSBURY: That treatment has been attempted but it was quite difficult to carry it out at home.

PSEUDOXANTHOMA ELASTICUM WITH ANGIOID STREAKS OF THE RETINA. Presented by DR. SIGMUND S. GREENBAUM.

M. R., a Negress aged 58, presents on the side of the neck, in the axillae and in the popliteal spaces lesions consisting of confluent patches somewhat pigmented but not having the yellowish color exhibited by white patients with pseudoxanthoma elasticum. Stretching the patches produces an irregular surface on palpation evidently resulting from pinhead-sized and larger smooth-topped papules. The patches vary in size according to the area involved. The largest ones are in the axillary region. The patient is poorly nourished and mentally dull; she had pneumonia at 42; one ovary was removed fifteen years ago, but there is no history of venereal disease. The patient has arteriosclerotic hypertensive heart disease, chorioretinitis of grade 2 B; concentric contraction of the visual fields and angioid streaks of the retina. Vision is 3/45 in the right and 4/45 in the left eye. The

urinalysis, serologic examination of the blood and differential blood count gave normal results. Chemical examination of the blood showed: calcium, 10 mg. per hundred cubic centimeters of blood; urea nitrogen, 14 mg. and 11 mg., respectively, at two examinations; cholesterol, 180 mg. and 182 mg., respectively, at two examinations, and sugar, 125 mg. and 89 mg., respectively, at two examinations. The coagulation time was four and a half minutes.

DISCUSSION

DR. FRANK C. KNOWLES: I do not think that the manifestations are as typical as in some cases that I have observed, and although the patient is a woman in whom one would expect pigmentation, there seems to be a hyperpigmentation in the axillae which makes one think of the possibility of acanthosis nigricans. I think this should be ruled out.

DR. FRED D. WEIDMAN: These yellow fleckings are not as conspicuous as in white patients. The picture was much more clearcut three or four months ago. Tonight it is necessary to stretch the skin tightly in order to detect the lesions, but they can be seen in the axillary folds, and the histologic picture shows pseudoxanthoma elasticum. The association with the angioid streaks is the interesting point of the presentation. Incidentally, ophthalmologists state that histologic examination of angioid streaks has never been done. Material for biopsy cannot well be taken from the retina; therefore, when dermatologists have occasion to examine patients with this condition at necropsy, they should secure material from the retina for histologic study. The pathologic basis of these angioid streaks has not been ascertained.

DR. ROBERT L. GILMAN: My co-workers and I think that the difficulty may be due to the analogy between senile elastosis and pseudoxanthoma elasticum. There are many patients with the former condition in the Philadelphia General Hospital, and some are examined post mortem, but in two or three instances in conducting a survey I have been assured that none of these patients had shown angioid streaks. We had hoped to determine whether or not there was an association between the two conditions, and we might have had a good opportunity to secure an eyeball for histologic study, but so far all search for angioid streaks has been fruitless.

DR. THOMAS BUTTERWORTH, Reading, Pa.: Two years ago, in Cleveland, a patient with such a condition was presented, but the manifestations did not resemble those exhibited by Dr. Greenbaum's patient. From an ophthalmologist I gained the impression that angioid streaks occur in conditions other than pseudoxanthoma elasticum.

DR. SIGMUND S. GREENBAUM: This patient was presented last night before the ophthalmologic society. Dr. de Schweinitz, Dr. Zentmayer and others looked into the eye, and photographs of the retina were shown on the screen. All agreed that there were angioid streaks. Such streaks do occur independently of pseudoxanthoma. Only about sixteen cases have been described in which the two conditions were present in the same patient, and no one is absolutely certain that one depends on the other and that their occurrence in the same patient is not merely coincidental. I was under the impression likewise that no one had made a histologic study of these streaks to see if their histologic structure resembles that of the lesions observed in cases of pseudoxanthoma, but in one case angioid streaks were discovered post mortem after the eye had been removed. Dr. Perry, of St. Louis, I believe, in examining an eye histologically thought that he was dealing with a case in which there had been angioid streaks ante mortem, but since the streaks had not been discovered he could draw no definite conclusion. That is the only weak point in his histologic description of these angioid streaks based on postmortem examination. But the picture, except for some degeneration of elastic fibers is altogether different from the changes in the skin. The skin undoubtedly shows a definite degeneration of elastic fibers and some swelling and degeneration of fibrous tissue.

PARAPSORIASIS. Presented by DR. EDWARD F. CORSON.

O. W. C., a man, had a febrile attack in the middle of January 1936 which was called grip by his family physician. On January 26 he first noticed an eruption on the chest; later it spread over the trunk and extremities in the form of numerous nonitching reddish maculopapules with scaly surfaces. Some were suggestive of pityriasis rosea, others of psoriasis. Palmar lesions were noted early in the disease. There were no lesions of the mucous membrane, no chancre and practically no involvement of the head. There was atrophy in places, especially on the posterior aspect of the body. Some lesions faded and others disappeared during the course of the outbreak. The Wassermann reaction of the blood was negative. No biopsy has been made.

DISCUSSION

DR. JOSEPH M. SCHILDKRAUT, Trenton, N. J.: I think a diagnosis of pityriasis rosea ought to be considered.

DR. CARROLL S. WRIGHT: I think this is a rather unusual disorder. Close examination shows a number of atrophic areas which are approximately the same size as the papulosquamous lesions, and the inference is that the atrophy was due to involution or produced by some of these lesions. This would be virtually impossible if the disorder were pityriasis rosea. On the other hand, it is rather unusual for as many atrophic lesions to be present after only two months. I cannot suggest any better diagnosis than the one that has been made, but the picture seems rather unusual.

DR. HERMAN BEERMAN: I should like to suggest the diagnosis of pityriasis lichenoides et varioliformis acuta of Habermann.

DR. FRANK C. KNOWLES: I think the atrophic areas are suggestive of a varioliform superficial type of scarring which is observed in association with the disorder described by Habermann; the atrophy probably follows some pustular lesions.

A CASE FOR DIAGNOSIS. LATE STAGE OF CUTANEOUS SYPHILIS (TUBERCULOSIS?) IN A TATTOOED AREA. Presented by DR. ROBERT L. GILMAN.

M. F., a man aged 47, extensively tatooed and emaciated, presents an annular arciform lesion on the flexor surface of the left forearm with an active indurated raised scaly border and central clearing showing pigmentation and possibly slight atrophy. In the advancing periphery apple jelly-like nodules can be seen on pressure with the diascope. The patch occupies a part of a tattoo design containing both lamp black and a mercuric sulfide (cinnabar). There are some scattered urticarial nodules (papules) about the upper portion of the trunk. The condition appeared on July 4, 1935, as a mosquito bite on the upper part of the flexor aspect of the left forearm. Since then the lesions have advanced to cover an area of 3 by 4 inches (7 by 10 cm.) on the arm. The patient has had a duodenal ulcer on account of which he underwent abdominal section. He has had frequent "colds." He had a soft chancre in 1905 but states that he did not have syphilis. A Wassermann examination of the blood in 1925 gave negative results. At present the Kolmer reaction is 44 and the Kahn reaction 444.

Medical examination showed the heart to be sound, but râles were heard at the base of the right lung. The patient probably has an old tuberculosis of the lungs.

NOTE.—The condition entirely involuted after three intramuscular injections of a bismuth preparation.

DISCUSSION

DR. HERMAN BEERMAN: In addition to the supposed syphilis there are quite a number of urticarial lesions the cause of which I should like to have explained. Incidentally an eruption of syphilis may involve the red areas of the tattoo, as has been reported in other instances.

Dr. B. L. Kahn: This patient clinically presents tuberculosis of the lungs. He has consolidation of the apex of the right lung, and in view of that I should rather lean to a diagnosis of tuberculosis.

Dr. Fred D. Weidman: I cannot be convinced that the areas of the tattoo containing red mercuric sulfide have escaped involvement. The histologic sections show a nonspecific picture which looked like lichen planus at first but on further study was seen to contain endothelioid cells; this led me to believe that the disorder is either tuberculosis or syphilis, but the picture is not distinctive enough to justify a differential diagnosis. There is a lesion on the neck which looks like a large wheal; I am sure it is not all edema; some infiltration is present there. There is a shallow depression in the center which makes me think of granuloma annulare; the picture is not typical, but it shows traits of that kind of process. I surmise that the acute infiltrated cutaneous lesions are tuberculids.

Dr. Robert L. Gilman: When I first saw this patient I thought he had tuberculosis, but at present I am doubtful. As Dr. Weidman said, the biopsy alone is not conclusive. The fact that the serologic reaction is positive can only be taken for what it is worth. As far as the tattoo is concerned, one papule is definitely over the area containing red mercuric sulfide and the second is going around it, so that does not help a great deal. The arciform configuration is important. On pressure with the diascope I found what I thought were apple jelly nodules in the periphery of the lesions. There is central atrophy with no scar. As to the urticarial lesions about which Dr. Beerman inquired, I observed them two days ago, but they were not urticarial at that time. They may represent some tuberculous aspect of the disease. All in all, I am somewhat more inclined to regard the disease as syphilis. I shall institute bismuth therapy and report the results.

NEW YORK DERMATOLOGICAL SOCIETY

Eugene F. Traub, M.D., *Secretary*

March 24, 1936

Ray H. Rulison, M.D., *President*

Darier-Roussy Sarcoid. Presented by Dr. Howard Fox.

J. N. C., a man aged 50, a physician, has suffered for nearly twenty years from an eruption in the center of his back. It consists of smooth, semisolid, more or less lumpy reddish elevations forming a palm-sized partial circle. As far as the patient is aware, the eruption on the back has never cleared up or changed materially since its onset. It has never caused any subjective symptoms. Three months before the outbreak of this eruption several similar patches appeared on the anterior aspect of the shoulder joints and in the clavicular region. The same tendency to form annular groups was noted. Examination of the blood showed 7,300 white cells; the differential cell count was normal. Histologic examination of a nodule excised from the back was reported by Dr. T. J. Riordan to show the Darier-Roussy type of sarcoid. The lesions on the back have improved markedly as a result of roentgen therapy. There is no history of tuberculosis, and the general health is apparently excellent. One brother died of pulmonary tuberculosis.

DISCUSSION

The members unanimously concurred in the diagnosis.

A Case for Diagnosis (Scrofuloderma?). Presented by Dr. Eugene F. Traub.

M. M., a girl aged 7 years, was presented before this society on Dec. 17, 1935 (Arch. Dermat. & Syph. **34**:532 [Sept.] 1936). Since the first presentation the

patient received small doses of filtered roentgen rays to the lesion on the neck and ultraviolet radiation over the body. These measures seemed to have no effect; the ulceration continued to enlarge and spread. The patient is presented again in order that the diagnosis might be checked and advice as to further treatment discussed. At present the ulceration measures about 3 inches (7 cm.) in diameter.

DISCUSSION

DR. GEORGE M. MACKEE: I suggest that Dr. Traub try the leaf of Aloe vera for a short time. If that is not efficacious it would be wise to determine whether or not the condition is tuberculous. I should then consider the advisability of plastic surgery.

DR. HOWARD FOX: Has this lesion been proved to be tuberculosis?

DR. EUGENE F. TRAUB: There has been no examination of tissue to prove that this lesion was tuberculous; the diagnosis of tuberculosis was based solely on the history and clinical course of the ulcer.

DR. JOSEPH J. ELLER: There is a possibility that there may be here a secondary mixed streptococcic infection. It might be worth while to try the emulsion of zinc peroxide used by Dr. Meleny.

DR. EUGENE F. TRAUB: At the previous presentation the members agreed unanimously that the disorder was scrofuloderma. Roentgen therapy was suggested as part of the treatment, but it has not proved to be of any benefit. Do the members advise discontinuing that type of treatment?

DR. GEORGE M. MACKEE: Yes, I should discontinue roentgen therapy.

A CASE FOR DIAGNOSIS (ACNE AGMINATA?). Presented by DR. HOWARD FOX.

A. H., a woman aged 28, a clerk, has suffered from the eruption for the past two years. There is no family or personal history of tuberculosis. She complains of occasional slight itching in the affected areas but shows no marks of scratching. The eruption consists of a broad band along the lower jaw and beneath it, consisting of discrete pinhead-sized dull red smooth and slightly depressed lesions. On pressure with the diascope the redness disappears, leaving faint yellowish brown stains. There are also a few lesions of acne vulgaris scattered over the face. The patient states that she has never received treatment (including roentgen therapy, electrolysis, etc.) for any cutaneous disease. Tests with tuberculin in graded dilutions gave strongly positive reactions with dilutions of 1:100,000 up to 1:10,000,000.

DISCUSSION

DR. GEORGE M. MACKEE: I do not altogether agree with the diagnosis of acne agminata, but I feel that the disorder belongs in that group. For instance, I cannot positively exclude the possibility of localized tuberculid of Lewandowsky. I think that one would have to observe the case longer and perhaps make a microscopic examination. The possibility of lupus miliaris faciei should also be considered.

DR. EDWARD R. MALONEY: I do not agree with the diagnosis of acne agminata. I do not know exactly what the disorder is, but I think the patient has true tuberculosis. If the condition were acne agminata I should not expect the reaction to tuberculin to be as active as it has proved to be. The eruption looks to me like the end-lesions of some process. It is not acne agminata, but I do not know what it is.

DR. FRED WISE: In my opinion the diagnosis of tuberculid of Lewandowsky is not applicable to an eruption which shows discrete stippling of the skin such as this patient has. There are no signs of stippling of the skin in Lewandowsky's tuberculid, whereas stippling occurs in acne agminata.

DR. GEORGE M. MACKEE: I have several patients with acne agminata who exhibit hundreds of tiny pitted scars.

DR. J. FRANK FRASER: There is one feature in favor of the diagnosis of tuberculid of Lewandowsky, namely, the positive reaction to tuberculin in a high dilution. A feature against Lewandowsky's rosacea-like tuberculid is that clinically the disorder does not resemble rosacea. I think that is important. Why did Lewandowsky coin the term "rosacea-like tuberculid" unless the eruption resembled rosacea? I am inclined to agree with Dr. Maloney that the disorder is not acne agminata.

DR. PAUL E. BECHET: I also agree with the remarks made by Dr. Maloney. A few months ago a patient with a similar disorder was presented before this society. The eruption was follicular and there were pinhead-sized papular lesions over the nose and cheeks and some scarring. The eruption had the same reddish ham color. At that time I suggested that if there was any possibility of there being such a thing as a follicular type of lupus vulgaris, that diagnosis might be applicable. I think this patient's condition belongs in the same category. It certainly does not fit the clinical description of typical acne agminata.

DR. FRED WISE: The disease to which Dr. Bechet refers is Fox's disease.

DR. J. FRANK FRASER: Acne agminata invades the appendages and produces necrosis.

DR. HOWARD FOX: The case to which Dr. Bechet refers is the one I presented some time ago before this society and in which there was a striking resemblance to this patient's eruption. Roentgen ray dermatitis can be excluded on the basis of the appearance of the skin and of the fact that the patient has never received roentgen therapy. Furthermore she has never been treated by electrolysis. Whether the disorder is a true tuberculosis or a tuberculid I do not know.

DERMATITIS HERPETIFORMIS. Presented by DR. FRED WISE.

B. W., a woman aged 33, Russian, a housewife, from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital presents a generalized eruption of four years' duration. The eruption began on the arms and trunk and spread to the buttocks and thighs. At this time the patient presents an eruption involving the extensor surfaces of the upper extremities, the chest and the forehead. It consists of discrete and confluent vesicles the size of a small pea and of a few larger bullae. Many of these vesicles have ruptured and are covered with an adherent crust. In areas where the lesions have undergone involution there is some pigmentation.

Patch tests with 50 per cent potassium iodide ointment on both affected and nonaffected areas gave a 4 plus bullous reaction at both sites. Microscopic examination of tissue from tested areas revealed deep-seated subepidermal vesicles.

Differential counts of the cells of the blood and of fluid from the bullae gave results as follows: polymorphonuclear leukocytes, 53 per cent in the blood and 40 per cent in the fluid from the bullae; lymphocytes, 40 per cent in the blood and 5 per cent in the fluid; eosinophils, 5 per cent in the blood and 55 per cent in the fluid; basophils, 2 per cent in the blood.

The interesting feature is the high percentage (55) of eosinophils in the contents of the bullae.

DISCUSSION

DR. FRED WISE: This patient is presented because of the high percentage of eosinophils in the fluid from bullous lesions.

DR. J. FRANK FRASER: The high eosinophil count in the fluid can be attributed to necrosis. Occasionally one sees subepidermal vesicles in dermatitis herpetiformis, and sometimes the vesicles are located in the derma. I have observed them in the papillae in association with necrosis of the connective tissue cells. In Hodgkin's disease the older pathologists used to regard the presence of eosinophils as a characteristic of the histologic picture. It is now known that these cells are seen only in association with necrosis.

SYCOSIS VULGARIS; ROENTGEN RAY DERMATITIS; EPITHELIOMA. Presented by DR. EUGENE F. TRAUB.

S. A. L., a man aged 48, a railroad signal operator, was first seen at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on Jan. 24, 1936. The patient's cutaneous trouble began about from fifteen to twenty years ago on the bearded areas of the face and was diagnosed at that time as sycosis vulgaris. For this condition he was given treatment with roentgen rays by several dermatologists. He also received injections of various preparations and vaccines. The process continued to show remissions and recurrences, and from time to time more roentgen therapy was given. A roentgen ray dermatitis developed and was followed by a number of squamous cell epitheliomas, which were removed from a number of areas on the cheek. Since the patient has come under my observation one large squamous cell epithelioma has been removed from the right cheek, and there is another on the nose which has not yet been removed; the involved areas have been treated with leaves of Aloe vera and with a proprietary ointment containing Aloe. The roentgen ray dermatitis is most pronounced about the lips and left cheek. The eruption, which has been regarded as sycosis vulgaris, is a peculiar one. Pustular lesions with a marked inflammatory base develop not only on the few remaining hairs about the face and neck but also on the forehead and on other nonhairy areas and at present suggest rosacea more strongly than ordinary sycosis. This is particularly true because of the peculiar remissions and flare-ups which occur from time to time more or less independently of therapy. These changes from better to worse occur with great rapidity, the patient's face appearing almost clear one week and looking much worse the next. He is presented, therefore, particularly for suggestions as to diagnosis and therapy, as this disorder has caused the patient many difficulties.

DISCUSSION

DR. J. FRANK FRASER: I suggest that the epitheliomatous lesions be removed surgically.

DR. EUGENE F. TRAUB: The chief concern at the present time is not about the epitheliomas. It is the pustular eruption which is giving the most trouble and which is most annoying to the patient because of the discomfort as well as of the appearance.

DR. HOWARD FOX: I saw this patient a few days ago, and in this short time the appearance of the eruption has changed considerably. There is no doubt about the previous sycosis and the severe roentgen ray dermatitis. The unusual feature is the presence of sycosis-like lesions on areas where there are no hair follicles. Whether he has rosacea in addition to other conditions is hard to say.

DR. EUGENE F. TRAUB: The first week the patient was seen chlorhydroxy quinoline ointment was prescribed, and within a week the eruption had almost disappeared, but I doubt whether it was the ointment that caused the improvement because when the eruption again flared up the same medicament was applied without benefit. Apparently the patient has these peculiar remissions and flare-ups regardless of the type of treatment used.

DR. FRANK C. COMBES: Has solution of sulfurated lime been used? It might be effective if it is not too strong.

DR. FRED WISE: At the clinic of the Post-Graduate Medical School and Hospital some of these chronic pustular lesions have responded to injections of staphylococcus toxoid. I should therefore suggest that as one of the forms of treatment in this case.

DR. HOWARD FOX: At the Bellevue Hospital treatment with injections of toxoid failed invariably.

EPITHELIOMA DEVELOPING IN HYPERTROPHIC SCARS. Presented by DR. HOWARD FOX.

W. D., a woman aged 19, referred from the Bellevue Hospital, was severely burned by fire at the age of 4 years. Skin grafting was performed, and eventually extensive hypertrophic scars appeared. When the patient was 11 years old a dollar-sized ulcer appeared, and after it was removed another skin graft was performed. The present ulceration first appeared one year ago and has gradually increased in size. There is an extensive solid area of deforming hypertrophic scars on the left side of the back extending from the sacrum to the left axilla and spinous process of the left scapula. In the center of this scarred area is an oval ulceration about 5 inches (12 cm.) in length with a thick, raised, indurated and waxy border. There is no clinical evidence of metastases, and the patient's general health is good.

DISCUSSION

DR. J. FRANK FRASER: The lesion is probably a squamous cell epithelioma, and as it occurs on a scar, it is probably of grade 2, according to Broders' index. However, one must remember that cancer cells grow more rapidly in younger persons, and for that reason treatment, preferably by endothermy, should be instituted immediately. Irradiation is contraindicated as the lower grades of squamous carcinoma are radioresistant.

DERMATITIS FOLLOWING ARSPHENAMINE AND BISMUTH THERAPY. Presented by DR. HOWARD FOX.

S. B., a mulatto aged 41, referred from the Bellevue Hospital, has recently been treated for syphilis at the clinic of the department of health. She received six intravenous injections of neoarsphenamine and seven intramuscular injections of a bismuth preparation, one of each type of injection being given weekly on separate days. After the last intravenous injection was given the lower lip became swollen, and a few days later a generalized eruption appeared. The eruption which has been present for three and a half weeks is symmetrical and involves the entire cutaneous surface with the exception of the palms, soles and greater part of the face. It is erythematosquamous and dry, the scaling being partly branny and partly lamellar. From the sternum to the navel there is a band of intensely pigmented lichenoid dermatitis. The upper extremities show a moderate number of marks of scratching. A striking feature is a brownish black pigmentation of the entire vermilion border of each lip. There is also a heavy line of pigmentation along the gums of the lower jaw. The patient has received four injections of sodium thiosulfate. The general condition is good.

DISCUSSION

DR. J. FRANK FRASER: I should be inclined to blame the bismuth rather than the arsenicals. Universal pigmentation from arsenic without any eruption of mucous membrane has been known to occur. The pigment on the mucous membranes seems to indicate that the condition is due to bismuth.

GENERALIZED PIGMENTATION AND DERMATITIS FOLLOWING BISMUTH THERAPY. Presented by DR. HOWARD FOX.

M. P., a mulatto aged 40, born in the West Indies, is referred from the Bellevue Hospital. She entered the Harlem Hospital one year ago for an operation on the thyroid gland. A routine Kahn test gave a 1 plus reaction. Although there was doubt as to the presence of a syphilitic infection, the patient was given a course of bismuth therapy. This was begun on Oct. 10, 1935, and consisted of weekly intramuscular injections of 1.5 cc. of a 10 per cent suspension of bismuth subsalicylate in oil. After the fifth treatment an eruption simulating pityriasis rosea and accompanied by general pruritus developed. After a week's rest treatment was resumed. The last treatment (the tenth) was given on Dec. 18, 1935.

At that time the eruption had increased in extent and severity. The patient was then sent to the Bellevue Hospital. She now presents a generalized profuse lichenified eruption with intense brownish black pigmentation covering large areas. The dorsum of the tongue shows numerous brownish dots and narrow bands of brownish pigmentation. The general condition is good. She has recently been treated with sodium thiosulfate. The patient, who is an intelligent woman, states that she has never had any intravenous injections at any time and that the only medication she has received during the past year was the intramuscular injections given at the Harlem Hospital. This information has been confirmed by the physician who treated her.

DISCUSSION

DR. PAUL E. BECHET: This case is exceedingly interesting. The pigmentation is excessive and most unusual. Pigmentation from bismuth alone is rare. When it does occur can it be due to contamination with arsenic? Would Dr. Fox kindly answer that question?

DR. A. BENSON CANNON: I think the pigmentation in this patient is due to arsphenamine. It is known that in the skin of Negroes pigmentation develops easily, appearing usually after any inflammation of the skin. In Negroes I have seen similar pigmented areas that involved not only the skin but also the mucous membranes of the mouth, throat and tongue follow both neoarsphenamine and silver arsphenamine therapy. The pigmentation is of the fixed type and lasts for many months or years. I have never seen a case of dermatitis that was proved to be due to bismuth, although I have seen several instances of dermatitis in which bismuth was suspected of being the offending agent. If bismuth causes a dermatitis it must be an unusual occurrence, as bismuth is so widely used in the treatment of syphilis. I should require one to prove that bismuth was responsible for a given eruption before I should accept the diagnosis of dermatitis due to bismuth. I think that if Dr. Fox can prove that this patient has a dermatitis due to bismuth the case will be well worth recording. The dermatitis may be due to the subsalicylate, the anesthetic or one of the oils in which the bismuth subsalicylate is incorporated. It may even be due to arsenic or to one of the other numerous causes of dermatitis. I have seen cases of dermatitis due to a metal in which the eruption was aggravated by injections of a bismuth preparation.

DR. GEORGE M. MACKEE: I think that spectroscopic examination would show the metallic content of the skin, no matter what it is. It can be estimated qualitatively and show how much more bismuth there is in this patient's skin than in normal skin.

DR. HOWARD FOX: From the history it seems possible that the extensive pigmentation as well as the dermatitis are due to bismuth therapy. While pigmentation of the mucous membranes due to bismuth is common, a similar involvement of the skin must be extremely rare, as it is not mentioned by Schamberg and Wright in a list of seventeen different types of disorders of the skin which are claimed to have been caused by bismuth. The patient is an intelligent woman, and she states that she received no medication except the ten intramuscular injections of a bismuth preparation at the Harlem Hospital. An examination for arsenic in the urine and if possible a spectroscopic examination of the skin for bismuth and arsenic will be made.

DR. GEORGE M. MACKEE: Dr. Gaul can estimate the metal content of the skin quantitatively, but that would not prove that the metal is the cause of the pigmentation.

A CASE FOR DIAGNOSIS. Presented by DR. J. FRANK FRASER.

L. E., a man aged 65, Russian, unemployed, was first seen at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, on Feb. 13, 1936, presenting an eruption of three years' duration.

The eruption consists of well defined erythematous, slightly infiltrated patches about the size of a half-dollar. The patches are located on the medial aspect of the right arm, the inner aspect of the right knee and the front of the left knee. There is slight desquamation between the toes.

Sections from a lesion on the arm show a tuberculoid structure. There is no evidence of pyoderma or mycosis fungoides.

DISCUSSION

DR. GEORGE M. MACKEE: Clinically the impression is sarcoid rather than mycosis fungoides. If one accepts the description of the section as accurate, one would on the basis of that description alone have to consider the possibility of lymphoblastoma. There were giant cells and a polymorphous infiltrate. There were no tubercles or pseudotubercles.

DR. A. BENSON CANNON: The patient certainly has a pustular folliculitis, and it occurs to me that a staphylococcic infection might account for the whole condition, including the pathologic picture and especially the presence of foreign body giant cells.

DR. J. FRANK FRASER: It is my impression that the pathologist who made the microscopic examination had the slides mixed, as the report does not correspond with the picture which I saw. In this section there is no evidence of mycosis fungoides but there is evidence of a tuberculoid condition. Syphilis can be excluded also. There is a deep-seated infiltration beginning in the corium and going deep, suggesting Bazin's disease or erythema induratum. Sometimes it is difficult to distinguish between a deep sarcoid and that condition. Therefore, I think that Dr. MacKee's suggestion of sarcoid is good. I shall study the section further and report on it at the next meeting.

DR. EUGENE F. TRAUB: The lesions directly below the knee are definitely pustular and follicular, and it is possible that they may have been influenced by pressure at this point. The eruption on the arm seems different, being somewhat nodular, but there too there are some pustules. At present a pyoderma of some sort, as suggested by Dr. Cannon, seems to me to be the only condition which would account for the entire picture.

DR. EDWARD R. MALONEY: May I say that pressure is one of the things that help to cause a deep sarcoid?

LIPOIDOSIS CUTIS ET MUCOSAE. Presented by DR. FRED WISE.

CASE 1.—E. W., a girl aged 16, a patient of Dr. Charles R. Rein, was first seen today at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital. She has a generalized eruption which has been present since she was 15 months old. Her sister, aged 4 years, has a similar eruption.

The skin of the entire face, from the hair line to the neck exhibits a network of irregularly outlined, oval, round and angular, deeply depressed scars and pits surrounded by well defined borders. These depressions vary from 4 to 10 mm. in diameter. The color is a mottled dirty-looking yellow. The chest, upper and lower extremities and portions of the upper part of the back exhibit numerous depressed scars of irregular shapes and diverse outlines; these are soft and shallow and show no change in color as compared with the adjacent normal skin. The ears and dorsa of the hands are unaffected. The buccal mucosae and soft palate exhibit a yellowish granular appearance. The palate, in front of the fauces, exhibits a flat reticulated scar, the size of a 25 cent piece. The lesions on the face bear no resemblance to atrophoderma vermiculatum or to ulerythema reticulatum. The patient is stout, robust and apparently in good health. Her voice has been quite hoarse since infancy. The hair of the scalp is sparse, and on close scrutiny the scalp gives the impression of atrophy and stippled scarring.

NOTE.—A subsequent microscopic examination revealed the tinctorial and cellular features of lipoid proteinosis.

CASE 2.—A. W., a girl aged 4 years, a sister of E. W., has on the cheeks diffuse plaques of discoid yellowish infiltrates devoid of inflammatory reaction with slightly scaling surfaces. In the midst of these plaques are numerous shallow pitted scars, from 3 to 5 mm. in diameter. On the lobe of the right ear are remnants of small papules which have undergone partial involution. Pitted scars from 3 to 5 mm. in diameter appear in isolated areas on the dorsa of the hands and forearms. The tongue and buccal mucosae as well as the tonsils exhibit a granular yellowish change but no definite infiltration. The child has been hoarse since the age of 14 weeks.

DISCUSSION

DR. HOWARD FOX: As a tentative diagnosis of this peculiar condition hydroa vacciniforme seems reasonable, though this condition is much more common in males than in females.

DR. EUGENE F. TRAUB: In a rather hurried examination I failed to see any elementary lesions; I discovered only a great number of scars looking exactly like scars of varicella. Before one could make a definite diagnosis, it would be necessary to study such a case for some time and watch the development of these lesions.

DR. PAUL E. BECHET: The disorder, especially in the older girl, is an exact duplicate of one exhibited by a patient on my service at the old Skin and Cancer Hospital. The diagnosis was lipoidosis cutis. The patient, a boy aged about 16, had aphonia and scarring, just as these girls have. I suggest the diagnosis of lipoidosis cutis. These conditions are more or less hereditary and occur in either diabetic or potentially diabetic patients. I think it would be interesting to find out if there is diabetes or potential diabetes in these patients' family. The older girl had real nodules between the scars; the eruption is not pure scarring and the scars are not hypertrophic. The nodules are waxy yellow exactly like those exhibited by my patient.

MONILETHRIX. Presented by DR. FRED WISE.

E. P., a woman aged 21, from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, first suffered from loss of hair at the age of 6 months. When she was a young child her eyebrows began to fall out. The scalp is uniformly covered by a sparse growth of crinkled hairs from 2 to 4 mm. in length which on microscopic examination are seen to be typical beaded hairs. The entire posterior surface of the scalp as well as the back of the neck is studded with prominent conical follicular hyperkeratotic papules. Other members of the family are free from the disease.

DISCUSSION

DR. PAUL E. BECHET: It might be of interest to mention that this young woman came to my service at the Skin and Cancer Hospital about eight years ago. The diagnosis of monilethrix was made at that time, and it was confirmed by laboratory examination. The disease has shown no change since then.

DR. FRED WISE: It is unusual not to find other members of the family affected.

ATYPICAL MORPHEA. Presented by DR. PAUL E. BECHET.

G. G., a girl aged 9 years, born in the United States, was first seen on March 5, 1936, at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital. At that time she had a lesion involving the left side of the neck of one year's duration.

Now she presents a large oval patch, measuring 1 by 1½ inches (2.5 by 3.8 cm.) in diameter, on the left side of the neck. The outer half of this lesion is pure white and undoubtedly atrophic. There is no violaceous tinge at the periphery of the lesion. In the central portion of this atrophic patch there is an infiltrated raised ivory yellow nodule measuring ½ inch (1.2 cm.) in diameter, which stands out in contrast with the pure white color surrounding it.

DISCUSSION

DR. EUGENE F. TRAUB: I agree with the diagnosis of morphea, and I believe that the portion of the lesion showing thinning and atrophy represents a more advanced stage of the same process, whereas the thickened nodular part represents an early stage of the same process.

DR. HOWARD FOX: This is by no means a cleancut example of morphea, in my opinion. With the exception of the little nodule in the center, which does not suggest morphea, the entire patch has no appreciable infiltration and no iliac border. A definite diagnosis can be made only on the basis of microscopic examination.

DR. GEORGE M. MACKEE: I think the differential diagnosis lies between leukoderma and morphea. I gained the impression that the skin was slightly infiltrated and more shiny and smooth than normal skin. Therefore, I agree with the diagnosis of morphea in spite of the lack of a violaceous areola.

DR. EUGENE F. TRAUB: It is not unusual to see patients who have both a patch of morphea and what appears to be leukoderma. I recall a number of such patients, particularly persons who had lesions on the face. It is possible that the depigmented areas in such instances merely represent a stage in the process, but of this I am not certain. A patient with a patch extending from the forehead down over the upper eyelid showed marked thickening of the portion on the forehead with no apparent thickening of the lid; complete canities affected only the eyebrows and eyelashes directly involved in the patch. In that case I considered the manifestations as parts of the same process, namely morphea with a leukoderma-like patch and canities.

DR. FRED WISE: I wish to emphasize my opinion that there is no sign of leukoderma in this patient. The white area is due to morphea or to something akin to morphea.

DR. RAY H. RULISON: I wrinkled the skin at the edges of the lesion and noticed that the wrinkles did not extend into the normal skin. Therefore, I think the disorder is morphea and not simple leukoderma because in simple vitiligo or leukoderma there is no change in the ability of the skin to wrinkle.

DR. PAUL E. BECHET: The discussion has brought out the point for which I presented the patient. The interesting feature is the nodule in the center of the lesion. Undoubtedly there is atrophy, and it is the white ivory-like atrophy so commonly seen in a healed eruption of morphea. I suspect that the nodule is simply an active sclerodermatous process going on in the center of a healed patch of morphea.

A CASE FOR DIAGNOSIS (LINEAR NEVUS, PSORIASIFORM TYPE? PSORIASIS WITH AN UNUSUAL DISTRIBUTION?). Presented by DR. J. FRANK FRASER for DR. G. VELLOZZI.

S. R., a woman aged 28, born in the United States, unemployed, was first seen on April 10, 1934, at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, exhibiting an eruption of fifteen years' duration. The lesions began on the inner aspect of the left arm, spreading down the inner aspect of the arm to a point 3 inches (7.6 cm.) below the left elbow, and across the left scapular region and down the chest on a line along the inner aspect of the nipple. Ten years ago lesions appeared on the scalp.

There is diffuse scaling of the scalp associated with several discrete lesions behind the ears and on the forehead extending slightly beyond the hair line. The lesions consist of coin-sized well circumscribed dry erythematous maculopapules covered with micaceous scales. In the axillae the lesions have become confluent. On the arm and chest the lesions are in a linear arrangement. Previous treatments failed to clear up the lesions entirely. The lesions disappeared with eight doses of one-fourth skin unit of roentgen radiation but recurred after two weeks.

A biopsy made on April 20, 1934, is reported on as follows: The microscopic diagnosis was psoriasis or a psoriatic type of eczema. Some acanthosis, parakeratosis, laminated horn cells and development of subcorneal Munro abscesses were observed. In the cutis the vessels were dilated and there was a moderate small round cell infiltrate. While the histologic picture was not characteristic, the observations warranted a diagnosis of psoriasis or a psoriatic type of eczema.

DISCUSSION

DR. HENRY H. WHITEHOUSE: The disorder looks like psoriasis to me. The scales are of that type. I should be more inclined to accept the diagnosis of psoriasis than that of a linear nevus. One sometimes sees patches of psoriasis in a linear arrangement.

DR. FRED WISE: I believe the patient presents an example of psoriatic linear nevus. I saw some lesions which remotely resembled lichen planus, but I do not think that lichen planus has anything to do with this condition. In the clinic of the New York Post-Graduate Medical School and Hospital my co-workers and I treated a patient with a similar eruption for four years with application of chrysarobin, roentgen irradiations and other measures without producing the slightest result, but after much effort we did finally clear the disorder by application of a strong chrysarobin ointment. The condition was linear psoriasis of the nevoid type.

DR. GEORGE M. MACKEE: The diagnosis is difficult clinically and often histologically. This patient might have a linear nevus or linear psoriasis. The fact that she has what appears to be psoriasis of the scalp plus the psoriasiform linear lesion I think favors the diagnosis of linear psoriasis rather than that of a psoriasiform linear nevus.

DR. RAY H. RULISON: As I recall the history, the patient's eruption on the arm is of considerably longer duration than the eruption on the scalp. A diagnosis of linear nevus will not account for the eruption on the scalp. I doubt whether any one would want to call the lesion on the scalp a linear nevus. Unless I am mistaken, that lesion did not appear until several years after the eruption on the arm. I should be inclined to make a diagnosis of psoriasis.

DR. HOWARD FOX: The differentiation of linear lichen planus and linear nevus has frequently been discussed, but no definite conclusions have been reached. The same question arises in trying to distinguish between linear psoriasis and linear nevus, but it does not arise often, as a linear configuration in psoriasis is quite rare. Clinically the scaling seems to me to be typical of psoriasis.

DR. FRANK C. COMBES: This discussion recalls to my mind the suggestion made by the French dermatologists that there is no psoriasis—only psoriatic persons. The skin of certain persons reacts to cellular injuries with the formation of a scaly lesion which is called psoriasis. The predilection of psoriasis for areas on the skin exposed to trauma bears out this theory. I have seen nevus tardus linearis which could not be differentiated from lichen planus clinically or histologically. There is no reason why a linear nevus cannot resemble psoriasis. The lesions on the scalp may be a reaction of the same nature. I think that until one knows what psoriasis is one cannot state definitely whether this patient's disorder is or is not that disease.

DR. J. FRANK FRASER: The microscopic picture showed no suggestion of lichen planus but exhibited some of the microscopic features of psoriasis, and for that reason I am inclined to accept Dr. MacKee's interpretation, namely, that the disorder is unilateral linear psoriasis. A strong objection may be offered against this interpretation, namely, the persistence of the lesions over so long a period without a remission under antipsoriatic medication. On the other hand there are no features in the histologic picture to support the diagnosis of nevus.

AMYLOIDOSIS CUTIS. Presented by DR. EUGENE F. TRAUB.

N. N., a man aged 56, born in Italy, from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, states that an eruption appeared on both legs between the knee and the ankle about ten years ago. There has been a gradual spread of the eruption in these areas, but it has not appeared on other parts of the body. There is no particular configuration to the eruption, the condition being diffusely spread over both legs. The eruption consists of tiny nodular or large papular brownish lesions with fairly smooth, rounded tops. The patient complains of no symptoms, and he has been in perfect health. The patient's tongue is not affected.

A medical examination revealed nothing significant. The Wassermann and the Kahn test gave negative results.

The biopsy was reported on as follows: The microscopic diagnosis was amyloidosis cutis. In one part of the section there was a hypertrophied nonparakeratotic scale at the margin of which was seen what appeared to be hypertrophied suprapapillary plates. In this area there was dyskeratinization; the granular layer was hypertrophied, the rete pegs were fused and the prickle cells swollen. One prickle cell appeared to be almost hyalinized. The basal cells were swollen and almost cuboid. The underlying connective tissue was broken up into small, rather opaque fragments and appeared to be different in texture from the surrounding connective tissue. The blood vessels persisted in this area. There was no inflammatory reaction either within it or around it.

With Van Gieson's stain the nest of atypical collagen fibers took on a brownish gray stain. Sections stained with methylene violet showed areas of red-staining cells in the upper portion of the corium about some of the blood vessels and hair follicles as well as small strands between some of the collagen fibers. Probably not all of the degenerated areas showed in the stain.

DISCUSSION

DR. HOWARD FOX: The disorder is somewhat similar to the one in a case I presented recently as a proved instance of amyloidosis cutis lichenoides (ARCH. DERMAT. & SYPH. **34**:507 [Sept.] 1936). The lesions in this case are, however, much more profuse.

DR. EUGENE F. TRAUB: I believe this patient was previously presented before a dermatologic society in Brooklyn. The physician who reported the case stated that he had examined several sections and that there was no doubt about that diagnosis. Because of the short time at my disposal before presenting the case, it did not seem advisable to attempt to make another biopsy.

DERMATITIS VENENATA AND CONICAL CORNEA. Presented by DR. J. FRANK FRASER.

E. N., a man aged 45, married, a news dealer, was first seen on Feb. 1, 1936, at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, exhibiting an eruption of three months' duration. About ten days before the eruption appeared the patient used mycozol, an ointment containing chlorbutanol, salicylic acid and mercury salicylate, on his feet for ringworm in larger amounts than called for. He thought the lesions on his feet were similar to those which developed on the body. The eruption began with severe itching on the right elbow without any visible lesion. After a few hours a few small papules appeared about a center that looked rather yellow. In two weeks the eruption had spread over both arms. Then it started on the dorsal aspect of the right knee and gradually spread to both legs. At the end of about seven weeks it appeared on the abdomen and spread from there to the back. It has also involved the ears, the tip of the nose and the lips. There has been pruritus during the entire time, but it has never been severe. The following cycle seems to occur when there is a flare-up: (1) there is itching; (2) the skin flares up; (3) the patient gets very

thirsty; (4) there is chilliness with nausea and then loss of appetite for a short period, the chills increase and more lesions develop; (5) the patient sleeps, and (6) the skin improves. The amount of involvement varies in these flare-ups.

The past history is irrelevant except for ocular trouble (conical cornea). Vision has failed rapidly for the past twelve years, and the patient has had this trouble for twenty years. The family history is irrelevant.

Physical examination gave negative results except for conical cornea, a marked decrease in the olfactory sense, small, chronically inflamed tonsils and the cutaneous eruption, which consists of a moderate to severe erythema and edema of the entire skin. There is a branny scaling, and marks of scratching are present on the back and legs. There is edema of both ankles.

The reaction to trichophytin was 4 plus; that to fluorides, 2 plus, and that to the ointment used by the patient, negative. Results of determinations of arsenic content of the urine were as follows: Arsenic as arsenic trioxide, 0.04 mg. per hundred cubic centimeters and 0.4 mg. per liter. Examination of the blood showed 4,230,000 red cells, 8,500 white cells, 82 per cent hemoglobin and a color index of 0.97. The differential count showed 63 per cent polymorphonuclear leukocytes, 11 per cent eosinophils, 4 per cent monocytes, 16 per cent small lymphocytes and 6 per cent large lymphocytes. Urinalysis gave negative results.

After a complete check-up on contacts, the clothes washed at the laundry seemed to be a possible factor, and patch tests with various materials were made. The tests with a 10 per cent solution of the disinfectant used in the laundry, Macy's hard and soft water soap, Macy's health soap, turkish towel, linen towel, cotton towel, cotton underwear, bath towel, 2 per cent solution of sodium hyperchloride and 1:7 solution of halite gave negative results. A test with powdered green soap gave a 2 plus and one with ozonite (P. & G.) soap a plus-minus reaction.

LICHEN NITIDUS. Presented by DR. FRED WISE.

V. P., a girl aged 11 years, from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, presents disseminated circumscribed plaques consisting of well defined glistening papules the size of a millet seed, the color of which varies in different locations from porcelain white to pink; the eruption involves the middle aspect of the sternal region, the forearms, the arms, the wrists and scattered patches on the back. The patient's general health is good.

The response to intradermal tests with graded dilutions of tuberculin was negative.

SEBORRHEIC DERMATITIS AGGRAVATED BY INJECTIONS OF ARSENICAL PREPARATIONS. Presented by DR. J. FRANK FRASER.

N. S., a man aged 31, a patient of Dr. Mabel G. Silverberg, had a secondary syphilitic eruption in June 1935. At that time he stated that he had seborrhea of many years' standing on the scalp and a recurrent eczematous eruption around the eyes and nose. The eruption around the eyes appeared after he received eight injections of 0.45 Gm. of neoarsphenamine. After that he received eight injections of 2 cc. of a solution of bismuth subsalicylate, and during that time the eczematous eruption around the eyes improved markedly. One injection of 0.2 Gm. of silver arsphenamine caused a marked exacerbation of the eruption. Three more injections of bismuth subsalicylate were well tolerated. Then mapharsen was given at weekly intervals, six injections of amounts beginning with 5 mg. and slowly increasing to 50 mg. being administered. After the last injection of mapharsen an eczematous eruption of the forehead, cheeks, area around the eyes and left axilla developed. The eruption was red, scaling and sharply marginated. Nearly every form of local application except boric acid ointment and calamine lotion aggravated the condition. One week ago a 2 per cent sulfur ointment was tried. After this a pityriasis rosea-like eruption appeared on the trunk, on the arms and in the groins.

The Wassermann reaction of the blood was 4 plus at the beginning of treatment and negative after the last injection of mapharsen.

A CASE FOR DIAGNOSIS (FIBROSARCOMA? CARCINOMA?). Presented by DR. PAUL E. BECHET.

M. G., a woman aged 40, born in the United States, a housewife, was first seen on March 24, 1936, at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital exhibiting a lesion which involved the left scapular region. The patient stated that the lesion had been present for ten years. There is a greatly infiltrated reddish brown tumor measuring 4 by 7 mm. in diameter and markedly indurated even beyond its surface involvement. Its surface presents a number of rounded globular nodules. According to the patient no nevoid growth preceded the appearance of the tumor. There are no lesions beyond it, at least none that can be called satellites.

DISCUSSION

DR. GEORGE M. MACKEE: The lesion looks to me like a nevocarcinoma or, if the members prefer, a melanoma.

DR. EUGENE F. TRAUB: Dr. MacKee's interpretation seems to me to be the correct one. The patient states that this lesion began as a small pimple or something of the sort which had been present before the present lesion appeared. There is a tiny fleshy mole with some hairs nearby. It is probable, therefore, that the growth began as a nevus which, however, did not happen to be present at birth.

DR. FRED WISE: I agree with the diagnosis of a malignant growth, but I think it is exceedingly difficult to make a positive diagnosis on the basis of appearance alone.

DR. J. FRANK FRASER: I do not believe that the lesion is a carcinoma. Neither do I believe that it is a fibroma. Fibroma occurs rarely in that location. I think it is a malignant melanoma. One of my chief reasons for making this diagnosis is the presence of satellite nodules. One of the most common locations of metastases in melanoma is the skin. There is no way of arriving at an exact conclusion without making a microscopic examination. I think a biopsy should be made.

DR. FRED WISE: Why not remove the whole lesion?

DR. J. FRANK FRASER: The whole lesion may be excised, but the satellites should also be removed.

DR. FRED WISE: I should remove the satellites too.

DR. HOWARD FOX: Ten years seems an unusually long duration for melanocarcinoma.

DR. J. FRANK FRASER: During that long period the growth may not have been malignant. Malignant transformation may have taken place only recently. I object to the term nevocarcinoma because the great majority of pathologists today have accepted Masson's theory that melanomas arise from nerve terminations. They are neuroectodermal growths. Nevocarcinoma and melanosarcoma are bad terms and should not be used. Malignant melanoma is a better designation.

DR. RAY H. RULISON: Clinically I am inclined to accept Dr. Fraser's diagnosis. The lesion looked to me like a melanoma because of its conformation.

DR. PAUL E. BECHET: The case is interesting from the standpoint of clinical diagnosis. Naturally a biopsy will be made. The patient was first seen this afternoon. I think a biopsy should be made before operation because that would make it possible to determine how extensive the operation should be and whether the lymph nodes should be removed. There is no doubt that the growth is malignant, but I doubt that it is a melanoma because there is only one small lesion on the side that might be called a satellite. There are no moles other than a few nevi on the face and absolutely no pigmented nevi of any kind. The patient states positively that there was no mole or nevus on the back before this lesion appeared. Besides, the duration is ten years, which is a long time for a melanoma.

BRONX DERMATOLOGICAL SOCIETY

HENRY SILVER, M.D., *Secretary*

March 26, 1936

EUGENE F. KELLEY, M.D., *President*

ADENOMA SEBACEUM. Presented by DR. SAMUEL FELDMAN.

J. M., an orphan boy aged 11 years, was admitted to the Morrisania Hospital because of fever and vomiting which had been present for four days and repeated attacks of convulsions. The diagnosis on admission was hydrocephalus, subarachnoid hemorrhages, convulsions and tuberous sclerosis.

The boy was delivered with the aid of forceps; his head has always been large; he did not learn to walk till he was 4 years old. He never talked; his mentality is low, and he has had four or five attacks of convulsions every year.

The skin of both cheeks and that of the chin and forehead are studded with numerous reddish, waxy and transparent nodules varying in size from that of a pinhead to that of a millet seed. On the left side of the trunk there are a number of yellowish flat elevated growths such as those exhibited by patients with adenoma sebaceum of the Balzer type. On the right little toe there is a soft tumor attached to the bed of the nail.

The Wassermann reaction of the blood was negative, and examination of the blood and urine gave normal results. The eyegrounds showed choked disks. The spinal fluid was xanthochromic. Electrocardiograms disclosed no abnormalities. The cholesterol content of the blood was 275 mg., and the cholesterol esters content 112 mg., per hundred cubic centimeters.

Note.—The patient died on April 10, 1936, seventeen days after admission to the hospital. Autopsy showed hydrocephalus and thinning of the cortex, tumor of the left ventricle, intraventricular hemorrhage caused by the rupture of the tumor into the ventricle and adenomatous tumors in the liver, kidneys, retroperitoneal space and cecum. The adenomas were characteristic for the organs in which they were located.

DISCUSSION

DR. SAMUEL M. PECK: I agree with the diagnosis of adenoma sebaceum.

DR. MARION B. SULZBERGER: I agree with the diagnosis. I think it would be interesting to discuss this case in connection with the case of Darier's disease presented this evening. Adenoma sebaceum manifests itself in a variety of cutaneous lesions which differ clinically and histologically and yet are all a part of the nevoid anomaly. The lesions on the face undoubtedly show the characteristics of adenoma sebaceum with more or less fibrosis, while the lesions on the toes are frank fibromas. There are some analogies to Darier's disease; namely, typical psorospermosis with typical dyskeratosis as described by Darier occurs in lesions of the body, and associated with these typical dyskeratotic lesions of the body one sees lesions on the hands which strongly resemble flat warts. The histologic structure of these flat warts is not usually typical of Darier's disease, although it may show some dyskeratosis such as may be seen also in ordinary flat warts.

DR. LOUIS CHARGIN: Adenoma sebaceum is not very rare; tuberous sclerosis associated with other anomalies is more rare. However, the two conditions are not commonly combined. This is the first case in which this combination is well developed that I have observed. I have observed a few cases in which there were lesions on the toes similar to those presented by this patient but no other evidence of adenoma sebaceum. I do not think that these lesions are found only in that disease. The lesions are clinically and histologically nothing else but fibromas. Was there any abnormality of the eyegrounds in this case?

DR. SAMUEL FELDMAN: Examination of the eyegrounds showed choked disks bilaterally. Cases of similar manifestations, including mental deficiency, nevus on the face and warty lesions on the toes, have been reported under the heading of Pringle's syndrome.

DARIER'S DISEASE. Presented by DR. RAPHAEL BREAKSTONE.

A. K., a man aged 22, born in New York, a printer, states that in early childhood he was treated for flat papular reddish lesions on the back of the hands diagnosed as juvenile warts. These lesions have never disappeared. About ten years ago there appeared on the upper part of the back many small brownish raised follicular lesions which have gradually spread and scattered over the chest, arms, legs, face and back of the neck. There are also lesions on the palms of both hands. The lesions vary in size from that of a pinhead to small plaques resulting from coalescence. Many of these papules are scaly; some are covered with dirty, greasy crusts; others are erythematous. They are shotlike to the touch. The patient has received roentgen therapy to the forehead with no apparent change of the lesions.

A section removed from the back showed all the characteristics of Darier's disease. Examination of the blood showed 93 per cent hemoglobin and 7,200 white cells. The differential count showed 56 per cent segmented forms, 2 per cent eosinophils, 1 per cent basophils, 4 per cent monocytes and 37 per cent lymphocytes. The Wassermann test of the blood and urinalysis gave negative reuslts.

DISCUSSION

DR. MAX SCHEER (by invitation): I was interested in Dr. Sulzberger's remarks about the histologic appearance of the wartlike lesions in Darier's disease. He stated that they do not show the histologic picture of Darier's disease but merely present the features of warts. With this I cannot agree. In 1916 I reported a case of early Darier's disease. The lesions clinically were wartlike but histologically showed typical features of Darier's disease, such as dyskeratosis and corps ronds.

DR. DAVID L. SATENSTEIN: I cannot agree with Dr. Sulzberger's statement that the wartlike lesions on the hands show a histologic picture of flat warts. There is a marked hyperkeratosis rather than acanthosis. This condition was described in the German literature as heloderma. Lesions not only occur on the dorsa of the hands but may be disseminated on the body and later turn into typical lesions of Darier's disease. This patient also stated that the lesions on the neck were originally flat, appearing similar to the lesions on the hands.

DR. ARTHUR SAYER: The patient shows lesions on the palms which are commonly found in Darier's disease. The lesions on the back of the hands look much like ordinary verrucae planae, but in view of their association with the palmar lesions it is only logical to assume that they are part of the same process. They are all lesions found in fully developed Darier's disease.

DR. RAPHAEL BREAKSTONE: I fully agree with the remark of Dr. Sulzberger that Darier's disease may show typical lesions of follicular keratosis and also lesions resembling juvenile warts.

A CASE FOR DIAGNOSIS (POIKILODERMA VASCULARE ATROPHICANS?). Presented by DR. SAMUEL FELDMAN.

L. G., a housewife aged 41, noticed a peculiar pigmentation on the face about four months ago.

On the left side of the face there is a brown ring-shaped lesion, the upper segment of which is decidedly atrophic. The entire skin of the face appears to be thinned, shiny and atrophic. There are numerous dilated capillary vessels. On the right arm the veins are prominent, shining through an atrophic skin; the appearance resembles the picture seen in acrodermatitis chronica atrophicans. There are large areas of pigmentation on both arms and forearms and numerous

white atrophic patches intermingled with the pigmented areas. On the back there are whitish elevations giving the impression of edema. Both legs and thighs show a reticulated pigmentation.

Histologic examination of skin removed from an apparently edematous lesion on the back revealed a thinned epidermis. The papillae and rete pegs were almost missing. There was a certain amount of edema in the corium.

DISCUSSION

DR. ARTHUR SAYER: I think the diagnosis of poikiloderma can be well substantiated in this case. The patient shows all the characteristics of the disease, such as scattered telangiectases, marbling of the skin, yellowish brown pigmentation and scaliness. In the description of mycosis fungoides with poikiloderma-like symptoms by Oliver (ARCH. DERMAT. & SYPH. **33**:267 [Feb.] 1936) these clinical features and also the presence of lesions resembling roentgen dermatitis were stressed. Of interest is the fact that the lesions on the left side of the face look almost like those of lupus erythematosus. It is to be recalled that in the discussion of Jacobi's original case in 1906 several other dermatologists considered the condition to be lupus erythematosus. The clinical picture in this case will change in the course of time and may eventually turn out to be that of mycosis fungoides, Hodgkin's disease or lymphatic leukemia, as mentioned by Oliver. This case should therefore be observed for a long time.

DR. DAVID L. SATENSTEIN: Poikiloderma presents clinically three main characteristics: telangiectasia, pigmentation and atrophy. As Dr. Sayer stated when the disease is well developed it resembles roentgen ray dermatitis. I studied a number of sections and found definite changes and a disturbance of the elastic tissue. I do not see anything in this patient that warrants a diagnosis of poikiloderma. All I could see was telangiectasia in a woman with a fine skin associated with areas of redistribution of pigment. There are lesions on the side of the forehead which show the picture seen after retrogressing granuloma annulare. This does not fit into the picture of poikiloderma.

DR. CHARLES WOLF: Oliver pointed out that many cutaneous disorders have been erroneously called poikiloderma, some of which eventuate in mycosis fungoides. This case is an example. The patient shows lesions on the forehead which might fit in with mycosis fungoides; itching is present. The diagnosis of poikiloderma should be kept in reserve.

DR. HENRY SILVER: Dr. Satenstein referred to the clinical characteristics of poikiloderma, namely telangiectasia, atrophy and pigmentation. On the strength of these features the condition could well be poikiloderma. The decision largely depends on one's conception of the disease. If one insists on the criteria of the disease as described by Petges and Cléjat and by Jacobi, it would be difficult to diagnose poikiloderma in many cases. However, there are a number of borderline disorders that have been recorded in the literature under the title of poikiloderma. Oppenheim differentiated three types: (1) the Jacobi type; (2) the Zinsser type characterized by nevus-like changes of the skin simulating poikiloderma which persist since birth or appear in early childhood, and (3) the R. Muller type in which the poikiloderma-like changes are usually an end-result of various dermatoses.

DR. SAMUEL FELDMAN: Atrophy, pigmentation and telangiectasia are present. There are areas where the blood vessels are seen through the skin as in all cases of atrophy of the skin. I do not believe that one is justified in foretelling the future in any case, but for the present a diagnosis of poikiloderma with a question mark is the most logical one.

MELANOMA OF THE TIP OF THE NOSE WITH METASTASES. Presented by DR. GEORGE J. SPINNER.

J. S., a man aged 38, single, came to the Fordham Hospital presenting a lesion on the nose of nine months' duration. It was first noted by his barber, who considered it a blackhead and attempted to extract it but succeeded only in macerating

the superficial layers of the skin. Four months later the patient noticed two purplish lesions on the penis, and two months later a bluish lesion appeared on the right middle finger.

At present the patient presents a lesion on the tip of the nose about the size of a large pea. The lesion appears to be light blue, but close inspection reveals two dark blue spots and one hemorrhagic spot in the center. On the penis are two lesions—one the size of a dime, hemorrhagic, smooth, slightly elevated and somewhat infiltrated; the other about the size of a large pea, bluish red and also infiltrated. On the right middle finger there is a raised hard bluish lesion the size of a small pea.

Glands are palpable in both groins. The Wassermann reaction of the blood was negative. Examination of the blood and urine gave normal results. A roentgenogram of the chest revealed no abnormalities.

DISCUSSION

DR. CHARLES LERNER: After carefully palpating the lymph nodes in both inguinal regions, I am of the opinion that they are already involved.

DR. GEORGE J. SPINNER: I hesitated to take a specimen for biopsy for the reason mentioned by Dr. Lerner. Excision is not warranted at present since metastases have already occurred. This is another instance of serious consequences following meddlesome interference by a layman.

FOLLICULITIS SYCOSIFORMIS ATROPHICANS (SYCOSIS LUPOIDES). Presented by DR. DAVID BLOOM.

Y. J., a man aged 27, was presented before the Section of Dermatology and Syphilis of the New York Academy of Medicine (ARCH DERMAT. & SYPH., this issue, p. 316).

DISCUSSION

DR. DAVID BLOOM: This condition is unusual because of the ophiasis-like involvement of the scalp, whereas the usual location for this type of alopecia, which has been called by Brocq lupoid sycosis, is on the bearded region and on the temple. The association with alopecia of the eyebrows and pubic region is also of interest.

DR. LOUIS CHARGIN: I wish to congratulate Dr. Bloom on the remarkable results of therapy obtained in this case in so short a time. The members may recall that when the patient was presented before the Section of Dermatology and Syphilis of the New York Academy of Medicine he exhibited a large number of follicular lesions on the sides of the scalp and face; these have cleared. This case interests me from another standpoint: If this condition is similar to that which is described as ulerythema sycosiforme, there should be considerably more atrophy than is apparent. Unna labeled the condition ulerythema because the process terminates in scars.

DR. DAVID L. SATENSTEIN: I had the opportunity to study three cases of this disorder for a long time, and I cannot accept Unna's name for the disease. I am under the impression that the condition is a sclerosing folliculitis or sycosis rather than anything related to atrophy. Atrophy when it does set in occurs rather late. I should prefer to use the name sclerosing sycosis, which is in agreement with the pathologic picture.

DR. DAVID BLOOM: I think that the statement of Dr. Satenstein is correct, for the biopsy shows fibrosis of the connective tissue of the corium and not atrophy. But there is atrophy of the glandular tissues and hair follicles. The name suggested by Hoffmann is the best of all given to this type of alopecia, which was called by Brocq lupoid sycosis, by Unna ulerythema sycosiforme, and by others by still other names. To the name folliculitis atrophicans sycosiformis Hoffmann added according to the location the word capillitii, barbae or corporis. This patient seems to have involvement of all three locations, although scarring is seen only in the scalp while in the pubic and in the bearded region there is alopecia without

any visible scarring. I am not sure whether the scarring on the legs is due to the same process, although he states that he had a similar eruption on the legs.

Since the previous presentation the folliculitis of the scalp has improved considerably. This improvement, I believe, is due to the application of an ointment of sulfur and chlorhydroxyquinoline, although two injections of an autogenous staphylococcus vaccine have also been given

ATOPIC DERMATITIS WITH UNILATERAL CATARACT. Presented by DR. MARION B. SULZBERGER for DR. R. BAER.

R. S., a schoolgirl aged 17, born in the United States, had infantile eczema from the time she was 6 weeks old. During childhood the eruption became limited to the cubital spaces and the neck. When the patient was aged 14 the condition spread to the face, arms and legs. About three years ago on two occasions the cutaneous lesions disappeared completely a few weeks after the patient was admitted to the Presbyterian Hospital. The eruption reappeared, however, after the patient went home. The patient states that she obtained slight relief during the summer. At the Mount Sinai Hospital, where she was admitted twice during the past one and one-half years, she was treated with fever therapy and also received a blood transfusion and injections of dust extract for hyposensitization. During an attack of pneumonia one year ago the skin cleared up completely. Three years ago asthma developed, apparently after the patient had ridden a horse. The family history revealed four cases of diabetes and one case of infantile eczema.

On admission to the Montefiore Hospital the patient showed the typical picture of an atopic dermatitis. There were also hepatosplenomegaly, thickened pleura affecting the lower portion of the right lung and hyperactive knee jerks and ankle jerks.

Examination of the eyes revealed a posterior cortical opacity in the left lens. The veins of the eyegrounds were slightly engorged. The patient gave positive reactions to scratch tests with many foods and inhalants. The Prausnitz-Küstner reaction to foods and inhalants was positive.

The basal metabolic rate was plus 14 per cent. The chemical examination of the blood showed that the cholesterol content was 102 mg. per hundred cubic centimeters, the cholesterol ester content 61 mg. and the chloride content 626 mg.

DISCUSSION

DR. MARION B. SULZBERGER: This is the second patient with this disorder presented before this society. About two months ago I presented a young man with atopic dermatitis and bilateral cataract (ARCH. DERMAT. & SYPH. **34**:328 [Aug.] 1936). In this girl the cataract is unilateral. It is worth stressing that the cataract is of the same type as that described in the other cases of atopic dermatitis, namely, a posterior capsular opacity.

DR. THEODORE ROSENTHAL: I am impressed by the fact that this condition commonly occurs in patients with marked allergic states, and obviously those patients are on a strict diet. Perhaps in addition to the cutaneous trouble they are suffering from a deficiency of vitamin B_2 or G. It may be worth while to give those patients brewer's yeast. It is known that cataract due to nutritional deficiency can occur in such deficiency states.

DR. ADOLPH ROSTENBERG: Can Dr. Sulzberger give information on the classification of such syndromes?

DR. ARTHUR SAYER: What is the prognosis in these cases? Do the cataracts get progressively worse, or do they clear up if the person is desensitized?

DR. MAX SCHEER (by invitation): Has Dr. Sulzberger any suggestions to offer with regard to therapy? Some patients with such disorders have been under observation for a long time at the Mount Sinai Hospital in Dr. Rosen's service. Dr. Peck and I have tried many things without any benefit.

Dr. Marion B. Sulzberger: The suggestion of Dr. Rosenthal regarding the possibility of avitaminosis is worth considering. Some of these patients might be suffering from such a condition. However, if it is present I do not believe that it is due to lack of vitamins in nutrition, because these cataracts have been described as occurring even before treatment of atopic dermatitis with elimination diets was used. I do not think that this girl or the other patients I have treated followed diets deficient in vitamin B_2 or G. These cataracts have been reported frequently enough in association with this type of dermatitis to make it clear that there is some connection between, and not a chance concomittance of, the two disorders. The prognosis is bad as far as the cataract is concerned. It certainly does not clear up. The visual disturbance once present, remains; however, the progress of the cataract is variable. Some cataracts progress more rapidly than others, and some patients are forced to have an extraction of the lens if the condition is bilateral. I do not wish to offer suggestions as to therapy of the cutaneous condition. Sometimes one thing helps and sometimes another, and sometimes the dermatosis continues to show severe exacerbations in spite of everything which is done. However, I did find that in some cases very small doses of arsenic are beneficial. In some cases injections of extract of adrenal cortex have seemed to afford temporary relief if a very fresh preparation is used. The extract should not be more than three weeks old from the time of manufacture and must be given in large doses. There is no certain known cure for this dermatitis; elimination diets and confining the patient to allergen-free rooms is a logical approach at management, but one scarcely practicable in most instances. The condition usually clears up spontaneously when a patient reaches the thirties.

Kerion Celsi Treated with Dermatomycol. Presented by Dr. Samuel Feldman.

This boy, aged 8 years, came to the Morrisania Hospital about two weeks ago, presenting a raised lesion on the scalp. The surface was uneven and studded with numerous perforations from which pus was exuding. In addition he had many scattered lesions of the type caused by microsporons. He was treated at first unsuccessfully with a 5 per cent ointment of ammoniated mercury. When treatment with graded doses of trichophytin (dermatomycol) was instituted it was noted that after the second dose there was a marked improvement. The large raised lesion became flat, and the purulent discharge stopped. After further treatment with dermatomycol even the superficial lesions of ringworm improved considerably.

DISCUSSION

Dr. Samuel M. Peck: The reports of Brazilian mycologists show results similar to that reported by Dr. Feldman. However, one should be cautious in judging results in cases of kerion Celsi because of the known tendency to spontaneous involution. On the other hand, the condition usually lasts for some time, and the results reported with the use of the special vaccine apparently markedly decreased the duration of the disease. The Brazilian trichophytin certainly deserves trial and thorough investigation before definite judgment is pronounced about its value.

Dr. Adolph Rostenberg: I have tried dermatomycol for the past two to three months. I am getting much better results than with other types of trichophytin. Any new drug seems to act favorably at first and then later seems to lose its remarkable effect. Dermatomycol, however, deserves a trial.

Dr. Marion B. Sulzberger: I agree with what Dr. Peck and Dr. Rostenberg have said. Dermatomycol is trichophytin in a somewhat modified form—a claso-vaccine prepared from over three hundred strains of fungi of the Trichophyton group—according to a modification of the method of Jausion and Sohier, introduced by da Fonseca and de Arêa Leão. The point is that one cannot judge the therapeutic value of any trichophytin on the basis of cases of superficial scaly

tinea such as that exhibited by this patient; the lesions often heal after one application of ammoniated mercury or even after cleansing with soap and water. Furthermore, I am not certain that the disorder is entirely healed; there may still be fungi, and there may still be recurrences. The inflammatory and pus-forming reactions on the scalp as a rule heal spontaneously; hence Dr. Feldman's presentation is no proof of the value of dermatomycol. The reports of the South American authors who employed the preparation in many hundreds of cases are so enthusiastic that one cannot ignore them. I have been using dermatomycol therapeutically for the last five months, and in some cases of dermatophytosis and ids I have found it to be of some benefit. I think that in some cases it is certainly superior to injections of ordinary trichophytin which, however, I would not recommend highly as a routine procedure. The only infections in which to make a real test of the therapeutic value of dermatomycol would be in infection of the scalp with Microsporon Audouini occurring in young children well before the age of puberty, or in favus or onychomycosis. I believe that the new trichophytin will have demonstrated its superiority only if it brings about rapid cures in these conditions. I have already noted some manifestations which suggest the possible efficacy of dermatomycol in some cases of infections of the scalp with Microsporon Audouini.

DR. SAMUEL M. PECK: It must be explained that the South American preparations for the treatment of fungous diseases are put up in two distinct forms; one which is used for the cutaneous tests and one which is used for treatment.

DR. MARION B. SULZBERGER: In collaboration with Dr. Wise and Dr. Lewis I have just completed a series of investigations comparing cutaneous reactions which were produced by ordinary trichophytins with those produced by the regular treatment preparation of dermatomycol injected intracutaneously (ARCH. DERMAT. & SYPH. **34**:207 [Aug.] 1936). Thirty-six per cent of patients reacting positively to ordinary trichophytin also reacted positively to dermatomycol.

A CASE FOR DIAGNOSIS (PIGMENTATION OF THE NAIL). Presented by DR. SAMUEL FELDMAN.

Mrs. F. W., a housewife aged 30, has suffered from dermatophytosis for the past five years. She received seven doses of one-fourth unit of roentgen radiation and fifteen injections of dermatomycol. Two weeks after the last injection she noticed a peculiar pigmentation of the nails.

All the nails show a bluish brown pigmentation. In all but one nail the pigmentation starts from the lunula, running in the form of streaks to the junction of the middle and the outer third of the nail plate. In one nail the pigmentation begins at the base.

DISCUSSION

DR. MARION B. SULZBERGER: I do not think that the disorder is pigmentation in the sense of melanin pigmentation, a deposit of blood pigment or a deposit of a foreign substance, such as silver. I have observed several cases of this disorder. I do not know exactly what causes it, but in a few cases it was demonstrated to be a fixed eruption due to a drug affecting the tissue beneath the nails. Dr. Wise and I reported two cases of such pigmentation due to phenolphthalein.

DR. DAVID L. SATENSTEIN: I agree with Dr. Sulzberger.

DR. CHARLES WOLF: If the patient's statement can be accepted that no pigmentation was present before she received roentgen treatment, it is possible that the pigmentation is a result of the irradiation. If it disappears in the course of time that will tend to confirm this view.

Book Reviews

Nouvelle pratique dermatologique. Vol. III. Edited by Darier, Sabouraud, Gougerot, Milian, Pautrier, Ravaut, Sezary and Clement Simon. Price, 300 francs. Pp. 1030, with 326 illustrations and 17 colored plates. Paris: Masson & Cie, 1936.

In the third volume of the *nouvelle pratique dermatologique* the first two hundred pages are devoted to the conclusion of the discussion of syphilis by Milian. The regional aspects of the tertiary manifestations are first described, and leukoplakia is then given extended consideration, as are the atrophic changes occurring in the skin as sequelae of syphilitic manifestations. The association of syphilis with other diseases, particularly tuberculosis and cancer, is then discussed. The changes in temperature in the various stages of syphilis are emphasized in a special chapter, the author pointing out that while syphilis is often regarded as an afebrile disease, the temperature is elevated at some time in the course in perhaps three fourths of the cases. After considering the biotropism of syphilis, Milian discusses the treatment of the disease. This section is short but bears throughout the imprint of the writer's great experience and original thought in this field. He advocates, after the early intensive treatment of syphilis, a continuation by means of the oral administration of mercury, as he feels that infection in the liver is particularly attacked by the drug administered orally. He also advocates a dosage interval of not less than three or more than five days between injections of neoarsphenamine. He states that the arsenic is almost entirely eliminated in five days after injection and that a longer period between injections permits the organism to multiply. An interval of at least three days is recommended because of the frequency with which reactions to the arsphenamines develop on the second or third day after treatment. In cases of early syphilis he recommends the use of both bismuth and mercury with the arsenicals; mercury should be used with arsenic in the first course of arsphenamine therapy and bismuth in the second.

The section dealing with congenital syphilis is complete; it covers the question of paternal transmission of the disease and of its transmission to the second and third generations and gives an extensive discussion of the signs and symptoms in various organs in this type of infection.

The section dealing with syphilis is closed by an interesting article by Lacapère in which he discusses the peculiarities of this disorder as it affects Africans and Asiatics.

The remainder of the volume is devoted to the consideration of various other dermatoses of microbic origin and includes an excellent article on yaws by Galliard and an equally comprehensive one on leishmaniasis by Vigne. Shorter articles by Darier deal with the cutaneous manifestations of malaria, amebiasis, trypanosomiasis and ulcerations due to fusospirillary organisms. Queyrat discusses balanoposthitis.

As might be expected, the consideration of cutaneous tuberculosis was assigned to Pautrier. Four hundred and seventy-eight pages are devoted to a comprehensive discussion of the historical, biologic, experimental and clinical aspects of this subject and to a discussion of allergy and anergy as they relate to the disease. From the clinical standpoint, Pautrier separates the cutaneous manifestations into three groups: classic cutaneous tuberculosis, atypical forms, including lichen scrofulosorum, papulonecrotic tuberculids, disseminated follicular lupus and erythema induratum, and finally the tuberculids, including the Boeck and Darier-Roussy types of sarcoid and lupus erythematosus. This section of the book, furnishing valuable references on this subject in which so many modifications of opinion have occurred in recent years, is made doubly valuable by the numerous excellent illustrations.

Leprosy is discussed by Gougerot in a section of eighty pages, and the therapy of this disease is extensively considered.

The volume also contains articles dealing with glanders, anthrax, chancroid and lymphogranuloma venereum, and Vigne closes the volume with a discussion of the cutaneous complications seen in diphtheria, typhoid fever, infection with Bacillus pyocyaneus, rheumatism and meningococcic infection.

Diseases of the Nails. By V. Pardo-Castello, with foreword by Howard Fox. Price, $3.50. Pp. 177, with 94 illustrations. Springfield, Ill.: Charles C. Thomas, Publisher, 1936.

This is an excellent book in every way. It is compact, well written and copiously illustrated, its 150 pages containing 94 illustrations in black and white. After first describing the anatomy of, and pathologic changes in, the nails, Pardo-Castello considers diseases of the nails under four groups: diseases peculiar to the nails; onychodystrophies; ungual manifestations of dermatoses and of systemic diseases, and congenital diseases. There is a chapter devoted to the roentgen treatment of diseases of the nails; there are also a list of occupations in which diseases of the nails occur and one of ungual symptoms due to poisons. The ARCHIVES has on several occasions stressed the need for monographs such as this one. The work is practical and sound. The literature is brought up to date; when it is possible, treatment is suggested, and there is a full index. The book is a useful adjunct to the dermatologist's library.

Urology. By Edward L. Keyes and Russell S. Ferguson. Sixth edition. Price, $10. Pp. 705. New York: D. Appleton-Century Company.

This book is concerned solely with urology.

Books Received

FUNZIONI ECTOFILATTICHE CUTANEE E DERMATOSI PROFESSIONALI, M. COMEL. pp. 147, with 2 illustrations. Milano: A. Cordani, 1936.

NUTRITIVE AND THERAPEUTIC VALUES OF THE BANANA: A DIGEST OF SCIENTIFIC LITERATURE, Boston: Research Department, United Fruit Company, 1936.

Directory of Dermatologic Societies *

INTERNATIONAL

NINTH INTERNATIONAL CONGRESS OF DERMATOLOGY AND SYPHILOLOGY
American Secretary: Dr. Howard Fox, 140 E. 54th St., New York.

FOREIGN

BRITISH ASSOCIATION OF DERMATOLOGY AND SYPHILOLOGY
(CANADIAN BRANCH)

J. J. McGovern, President, 4005 Dorchester St., Montreal.
F. L. Boulais, Secretary-Treasurer, 2061 St. Denis St., Montreal.
Place: Montreal. Time: May 1937.

ROYAL SOCIETY OF MEDICINE, SECTION OF DERMATOLOGY

H. W. Barber, President, 7, Devonshire Pl., London, W. 1.
Louis Forman, Secretary, 7, Devonshire Pl., London, W. 1.

NATIONAL DERMATOLOGIC SOCIETIES

AMERICAN MEDICAL ASSOCIATION, SCIENTIFIC ASSEMBLY, SECTION ON DERMATOLOGY AND SYPHILOLOGY

Paul A. O'Leary, Chairman, 102 Second Ave., S.W., Rochester, Minn.
J. Bedford Shelmire, Secretary, 1719 Pacific Ave., Dallas, Texas.
Place: Atlantic City, N. J. Time: June 7-11, 1937.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY

Howard Fox, President, 140 E. 54th St., New York.
C. Guy Lane, Secretary, 416 Marlborough St., Boston.

AMERICAN DERMATOLOGICAL ASSOCIATION

John H. Stokes, President, 3800 Chestnut St., Philadelphia.
F. D. Weidman, Secretary, University of Pennsylvania, Philadelphia.

SECTIONAL DERMATOLOGIC SOCIETIES

CENTRAL STATES DERMATOLOGICAL ASSOCIATION

Samuel Goldblatt, President, 3208 Colerain Ave., Cincinnati.
Raymond G. Senour, Secretary-Treasurer, 19 W. 7th St., Cincinnati.
Place: Cleveland. Time: Dec. 5, 1936.

MISSISSIPPI VALLEY DERMATOLOGICAL SOCIETY

A. H. Conrad, President, 3720 Washington Blvd., St. Louis.
Roy L. Kile, Secretary-Treasurer, 3720 Washington Blvd., St. Louis.

NORTHERN NEW JERSEY DERMATOLOGICAL SOCIETY

Henry J. F. Wallhauser, President, Medical Tower, Newark.
Louis J. B. LeBel, Secretary, 165 Grant Ave., Nutley.
Place: Academy of Medicine of Northern New Jersey, Newark. Time: Third Tuesday of January, March, May, September and November.

*Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date.

SOUTHERN MEDICAL ASSOCIATION, SECTION ON DERMATOLOGY AND SYPHILOLOGY

Jack W. Jones, Chairman, 384 Peachtree St., Atlanta, Ga.
Winston U. Rutledge, Secretary, 332 W. Broadway, Louisville, Ky.

STATE DERMATOLOGIC SOCIETIES

CALIFORNIA MEDICAL ASSOCIATION, SCIENTIFIC ASSEMBLY, DERMATOLOGY AND SYPHILOLOGY SECTION

Thomas J. Clark, Chairman, 400, 29th St., Oakland.
George V. Kulchar, Secretary, 450 Sutter St., San Francisco.

CONNECTICUT STATE MEDICAL SOCIETY, SECTION ON DERMATOLOGY

Maurice J. Strauss, Chairman, 41 Trumbull St., New Haven, Conn.
Edward A. Abbey, Secretary, 442 Temple St., New York.

FLORIDA SOCIETY OF DERMATOLOGY AND SYPHILOLOGY

J. L. Kirby-Smith, Chairman, 204 Laura St., Jacksonville.
W. M. Sams, Secretary, 310 Ingram Bldg., Miami.

LOUISIANA DERMATOLOGICAL SOCIETY

M. T. Van Studdiford, President, 912 Pere Marquette Bldg., New Orleans.
R. A. Oriol, Secretary-Treasurer, Maison Blanche Bldg., New Orleans.

MASSACHUSETTS MEDICAL SOCIETY, SECTION ON DERMATOLOGY AND SYPHILOLOGY

Harvey P. Towle, President, 453 Marlborough St., Boston.
Rudolf Jacoby, Secretary, 270 Commonwealth Ave., Boston.

MEDICAL SOCIETY OF THE STATE OF NEW YORK, SECTION ON DERMATOLOGY AND SYPHILOLOGY

Albert R. McFarland, Chairman, 227 Alexander St., Rochester.
Harry C. Saunders, Secretary, 161 W. 87th St., New York.
Place: Rochester. Time: May 25-26, 1937.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA SECTION ON DERMATOLOGY

Abraham Strauss, Chairman, Medical Arts Bldg., Philadelphia.
L. G. Bembauer, Secretary, 5026 Jenkins Arcade Bldg., Pittsburgh.

MICHIGAN STATE MEDICAL SOCIETY, SECTION ON DERMATOLOGY AND SYPHILOLOGY

G. Warren Hyde, Chairman, 2501 W. Grand Blvd., Detroit.
Ruth Herrick, Secretary, 26 Sheldon Ave., Grand Rapids.

MINNESOTA DERMATOLOGICAL SOCIETY

L. H. Winer, President, 78 S. Ninth St., Minneapolis.
F. W. Lynch, Secretary, Lowry Medical Arts Bldg., St. Paul.
Time: First Wednesday in October, December, February and April.

OKLAHOMA STATE DERMATOLOGICAL SOCIETY

Charles P. Bondurant, President, 412 Medical Arts Bldg., Oklahoma City.
Darrell G. Duncan, Secretary, 914 Medical Arts Bldg., Oklahoma City.

TEXAS DERMATOLOGICAL SOCIETY

C. M. Griswold, President, 1215 Walker Ave., Houston.
Everett R. Seale, Secretary, 1215 Walker Ave., Houston.

LOCAL DERMATOLOGIC SOCIETIES

Baltimore-Washington Dermatological Society

Leon Ginsburg, President, The Walbert, Baltimore.
Francis A. Ellis, Secretary, 104 W. Madison St., Baltimore.

Bronx Dermatological Society

Paul Gross, Chairman, 35 E. 84th St., New York.
Henry Silver, Secretary, 290 West End Ave., New York.

Brooklyn Dermatological Society

George F. Price, President, 884 Lincoln Pl., Brooklyn.
Mortimer J. Cantor, Secretary, 907 St. Marks Ave., Brooklyn.
Time: Third Monday of each month except June, July, August and September.

Buffalo-Rochester Dermatological Society

I. J. Arnsson, President, 468 Delaware Ave., Buffalo.
Richard L. Saunders, Secretary, 333 Linwood Ave., Buffalo.

Central New York Dermatological Society

George M. Fisher, President, 264 Genesee St., Utica.
Rudolph Ruedemann Jr., Secretary-Treasurer, 214 State St., Albany.

Chicago Dermatological Society

Otto H. Foerster, President, 208 N. Wisconsin Ave., Milwaukee.
Herbert Rattner, Secretary, 7 W. Madison St., Chicago.

Cincinnati Dermatological Society

Raymond G. Senour, President, Carew Tower, Cincinnati.
Leon Goldman, Secretary-Treasurer, Doctors Bldg., Cincinnati.

Cleveland Dermatological Society

John E. Rauschkolb, President, 1705 Medical Arts Bldg., Cleveland.
C. L. Cummer, Secretary, 1010 Hanna Bldg., Cleveland.

Detroit Dermatological Society

W. G. Wander, President, 509 Kresge Bldg., Detroit.
G. Warren Hyde, Secretary-Treasurer, 2501 W. Grand Blvd., Detroit.

Los Angeles Dermatological Society

Harry P. Jacobson, Chairman, 2007 Wilshire Blvd., Los Angeles.
Thomas W. Nisbet, Secretary, 65 N. Madison Ave., Pasadena, Calif.
Time: Second Tuesday of each month, October to May, inclusive.

Manhattan Dermatologic Society

Isidore Rosen, Chairman, 106 E. 54th St., New York.
Mihran B. Parounagian, Secretary, 126 E. 39th St., New York.

Montreal Dermatological Society

B. Usher, President, 1538 Sherbrooke St., W., Montreal, Canada.
Paul Poirier, Secretary, 450 Sherbrooke St., E., Montreal, Canada.

New England Dermatological Society

William P. Boardman, President, 388 Marlborough St., Boston.
J. Harper Blaisdell, Secretary, 45 Bay State Road, Boston.

New York Academy of Medicine, Section of Dermatology and Syphilis

J. Gardner Hopkins, Chairman, 102 E. 78th St., New York.
David Bloom, Secretary, 135 E. 50th St., New York.

New York Dermatological Society

Paul E. Bechet, Chairman, 55 Park Ave., New York.
Eugene F. Traub, Secretary, 140 E. 54th St., New York.

Omaha Dermatological Society

J. A. Borghoff, Chairman, 1319 Medical Arts Bldg., Omaha.
Donald J. Wilson, Secretary, 1113 Medical Arts Bldg., Omaha.

Philadelphia Dermatological Society

Vaughn C. Garner, Chairman, Germantown Professional Bldg., Philadelphia.
Thomas Butterworth, Secretary, 238 N. 5th St., Reading, Pa.

Pittsburgh Dermatological Society

Joseph J. Hecht, President, 506 Medical Arts Bldg., Pittsburgh.
Abraham Fisher, Secretary, 530½ Fifth Ave., McKeesport, Pa.

St. Louis Dermatological Society

A. H. Conrad, President, 3720 Washington Blvd., St. Louis.
Roy L. Kile, Secretary-Treasurer, 3720 Washington Blvd., St. Louis.
Place: Barnard Free Skin and Cancer Hospital. Time: Second Wednesday of each month.

San Francisco Dermatological Society

L. R. Taussig, President, 384 Post St., San Francisco.
John M. Graves, Secretary, 909 Hyde St., San Francisco.